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The Strepsiptera of Eastern Fennoscandia

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Abstract

The following species have been found in Eastern Fennoscandia: *Stylops* spp., *Halictoxenos spencei* (Nassonov), *H. tumulorum* Perk., *Pseudoxenos sphecidarum* (Duf.), *Halictophagus curtisii* Dale (?) and *Elenchus tenuicornis* (Kirby). They have also all been found in Finland except *P. specidarum*. The numbers of host species of Strepsiptera recorded in Finland, the numbers of host specimens examined and the percentages of parasitized specimens were as follows: *Stylops* spp.: 11 *Andrena* species, 4960 specimens, 2,9 %; *H. spencei:* 3 *Halictus* species, 1980 specimens, 0,2 %; *H. tumulorum:* 1 *Halictus* species, 1057 specimens, 1,0 %; *E. tenuicornis:* 17 delphacid species, 122346 specimens, 23,6 %. The phenology of Strepsiptera is described and previous studied of Finnish Strepsiptera are reviewed.

Studies on Strepsiptera in Finland

Mäklin (1866) began the study of Strepsiptera in Finland; his first article dealt with the species *Stylops melittae* Kirby. Later he (Mäklin 1867) reported another species, *Pseudoxenos sphecidarum* (Duf.) under the name *Xenos vesparum* Rossi. A long period followed during which no new species were found (Hellén 1921, 1923). However Lindberg (1925) reported that he had found deformed leafhopper nymphs, which he assumed to be parasitized by Strepsiptera; Hellén (1925) considered the parasite to be an *Elenchus* species. During the compilation of Enumeratio Insectorum Fenniae, Hellén (1935 a and b, 1936) determined the specimens of Strepsiptera collected in Finland and found that they represented five species: *Stylops ?melittae* Kirby, *S. wilkellae* Perk., *Halictoxenos spencei* Nassonov (= *H. cylindrici* Perk.), *H. tumulorum* Perk. and *Pseudoxenos sphecidarum* (Duf.), and in addition two possibly unknown *Stylops* species. A year later Lindberg (1936) described the biology of *Elenchus tenuicornis* (Kirby) (= *Elenchinus delphacophilus* Ahlb.) parasitizing *Chloriona glaucescens* Fb. and reported that the species occurs in Finland. Later he gave a more detailed account of its biology and described its effect upon the morphology of some leafhoppers in Finland (Lindberg 1939, 1943, 1949) and in Macaronesia (Lindberg 1960). Kontkanen (1950) published information on leafhoppers parasitized by Strepsiptera in eastern Finland. The subsequent literature on Finnish Strepsiptera includes descriptions in two popular works (Ahlberg & Kontuniemi 1957, Nuorteva 1957).

A fresh impetus was given to the study of Strepsiptera, when *E. tenuicornis* was found to be an important enemy of the most harmful vector leafhopper of Finland, *Javesella pellucida* (F.) (Kanervo et al. 1957). It was discovered parasitizing the same *J. pellucida* specimens as *Dicondylus lindbergi* Heikinh. (Heikinheimo 1957, Raatikainen 1967 a); parasitized leafhoppers were found to behave unlike healthy individuals and they were caught with a net in greater numbers than healthy ones (Heikinheimo & Raatikainen 1962).The effects of *E. tenuicornis* upon the population dynamics of certain leafhoppers was described (Raatikainen 1960, 1967 a, 1970 b, 1972, Raatikainen & Vasarainen 1964); the morphology of parasitized specimens of a host species was examined (Raatikainen 1966) and a stydy was made of the ecology of the elenchid species and its effect upon the host (Raatikainen 1967 b). In 1963 *Halictophagus curtisii* Dale was reported new to Finland (Raatikainen 1970 a). Pekkarinen (1971) listed the Finnish bee species parasitized by Strepsiptera and Raatikainen and Heikinheimo (1973) made a brief report on the flying times of different latitudes.

Frequency, distribution and phenology of Strepsiptera and hosts

The total number of Strepsiptera has not been determined, because some species cannot distinguished with any certainty. However the number is assumed to be small. According to Kinzelbach (1969), about 40 species are known in Central Europe. In Sweden four species have been reported: *Stylops* sp., *Xenos vesparum* Rossi, *Halictophagus curtisii* Dale and *Elenchus tenuicornis* (Kirby) (Heqvist 1958); in Norway 2—3 species: *Halictoxenos spencei* Nassonov (= *H. cylindrici* Perk.) and *Stylops* spp. (Löken 1967); and in Finland at least 6 species. 15 Apidae, one Sphecidae and 17 Delphacidae species have been reported as hosts in Finland.

Tables 1 and 2 give an idea of the frequency of Strepsiptera species; the data were gathered from all the most important Finnish collections. In addition the relevant literature was consulted and

Table 1. Frequency of some hosts parasitized by *Elenchus tenuicornis.*

	Total No.	Parasitized by Strepsiptera		Investigator
		No.	%	
Chloriona smaragdula	1454	243	16.7	Lindberg 1939
C. glaucescens	817	115	14.1	Lindberg 1939
Stiroma bicarinata	3439	72	2.1	
Dicranotropis hamata	962	193	20.1	Lindberg 1949, Raatikainen & Vasarainen 1964 and present study
Criomorphus moestus	115	3	2.6	
Megadelphax sordidula	8229	38	0.5	Raatikainen 1960, 1970 b and present study
Muirodelphax denticauda	190	2	1.1	
Xanthodelphax flaveola	278	1	0.4	
X. straminea	455	156	34.3	Lindberg 1949 and present study
Javesella pellucida	102179	27543	27.0	Lindberg 1949, Raatikainen 1967 a and present study
J. dubia	675	125	18.5	
J. obscurella	3176	389	12.2	
J. discolor	145	5	3.4	
J. forcipata	232	1	0.4	

Table 2. The bee species in which Strepsiptera have been found in Finland. The country has been divided into seven latitudinal zones. The first number in the column of each zone is the total of bees examined. The second number is the percentage of stylopized specimens. The corresponding numbers for the whole country are given in the last column.

		I		II		III		IV		V		VI		VII			
		60°—61°		61°—62°		62°—63°30′		63°30′—65°		65°—66°30′		66°30′—68°		68°—70°			
Andrena	subopaca Nyl.	168	0.6	109	—	31	—	5	—	5	—	—	—	—	—	318	0.3
	minutuloides Perk.	53	1.9	217	—	1	—	—	—	—	—	—	—	—	—	271	0.4
	cineraria L.	173	5.2	145	2.8	43	2.4	—	—	1	—	—	—	—	—	361	3.9
	ruficrus Nyl.	386	—	134		150	0.7	5	—	6	—	1	—	2	—	684	0.1
	vaga Panzer	187	0.5	208	1.0	56	1.8	10	—	1	—	—	—	—	—	462	0.9
	lapponica Zett.	141	2.1	93	4.3	83	4.8	22	—	37	2.7	34	—	104	1.0	514	2.5
	fucata Smith	325	7.7	156	7.7	68	2.9	17	—	7	—	—	—	2	—	575	6.8
	fuscipes Kirby	348	0.3	99	1.0	51	—	—	—	—	—	—	—	—	—	498	0.4
	wilkella Kirby	482	5.0	235	7.6	5	—	—	—	—	—	—	—	—	—	722	5.8
	gelriae v.d. Vecht	159	6.3	101	4.0	12	—	—	—	—	—	—	—	—	—	272	5.1
	intermedia Thom.	91	7.7	47	8.5	140	0.7	3	—	2	—	—	—	—	—	283	4.2
Halictus	calceatus Scop.	328	0.6	113	—	60	—	10	—	4	—	1	—	1	—	517	0.4
	fulvicornis Kirby	137	0.7	172	—	23	—	—	—	—	—	—	—	—	—	332	0.3
	niger Viereck	573	0.2	344	—	110	—	19	—	37	—	27	—	21	—	1131	0.1
	tumulorum L.	570	1.8	327	0.3	150	—	4	—	6	—	—	—	—	—	1057	1.0
Totals		4121	2.3	2500	2.0	982	1.0	95	—	106	0.9	63	—	130	0.8	7997	2.0

a material of over 100 000 leafhopper specimens was collected from nature. This material comprises only collections that appeared to show the true proportions of the parasitized hosts. Collections consisting only of parasitized or healthy hosts were discarded; so were the leafhopper specimens collected before mid-June, when the parasite is only rarely visible (cf. Fig. 1). Most records of species parasitizing leafhoppers were, however, included, even though the proportion of parasitized hosts was often greater than average. According to the present material, information in the literature and our observations, *Elenchus tenuicornis* is the most common and abundant Strepsiptera species in Finland, occuring all over the country in suitable biotopes (Fig. 2). Its main host is *Javesella pellucida,* the most common leafhopper in Finland. Judging by the frequency and abundance of the parasitized specimens, the next most important host species are probably *J. obscurella* and *Stiroma bicarinata* (Table 1). The percentage of parasitized individuals may not be significantly greater in *Xanthodelphax straminea* than in *X. flaveola,* but the material of the former species included a collection parasitized exceptionally heavily by *Elenchus tenuicornis.*

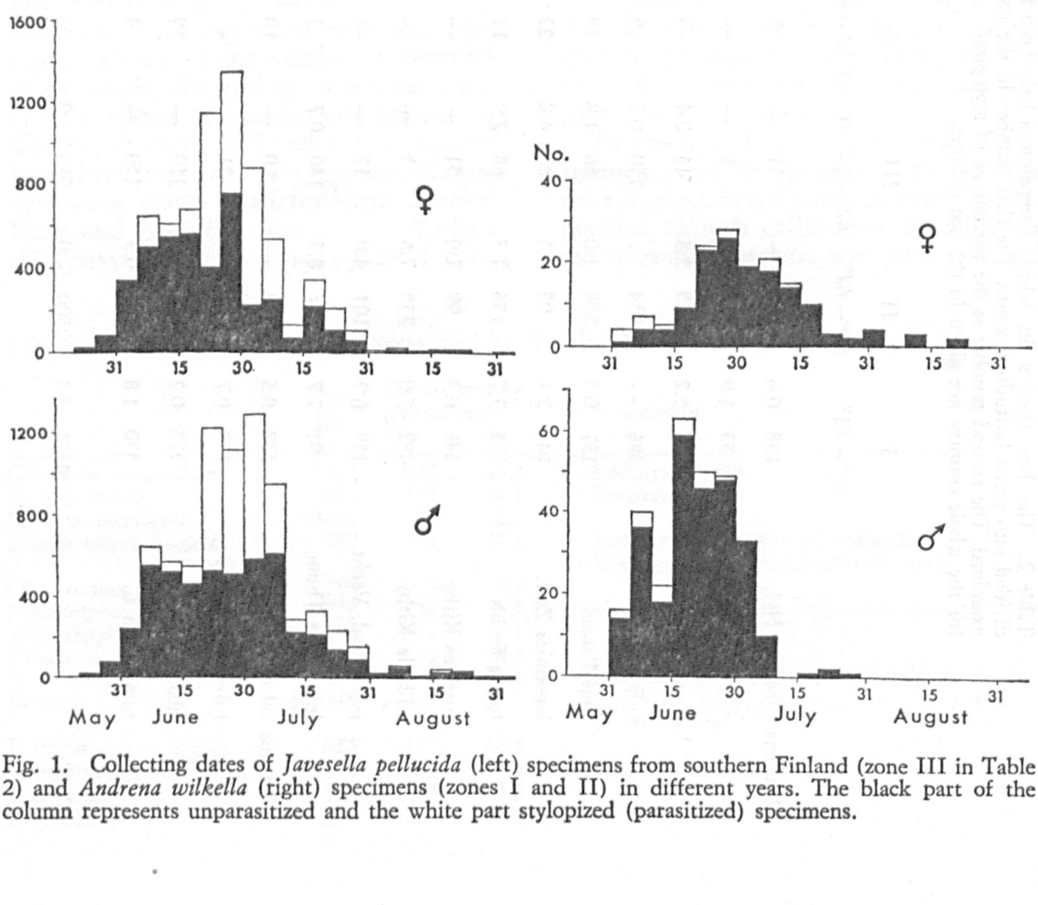


Fig. 1. Collecting dates of *Javesella pellucida* (left) specimens from southern Finland (zone III in Table 2) and *Andrena wilkella* (right) specimens (zones I and II) in different years. The black part of the column represents unparasitized and the white part stylopized (parasitized) specimens.

Local variations were observed in the percentage of parasitized individuals in many species. *E. tenuicornis* is relatively scarce in south-western and northern Finland and in the archipelago of the Baltic, because the density of the hosts is low in these areas. It is evident that *E. tenuicornis* reduced the numbers of many leafhopper species very significantly, even though the percentage of parasitized individuals is considered to be greater in samples than in nature (Heikinheimo and Raatikainen 1962).

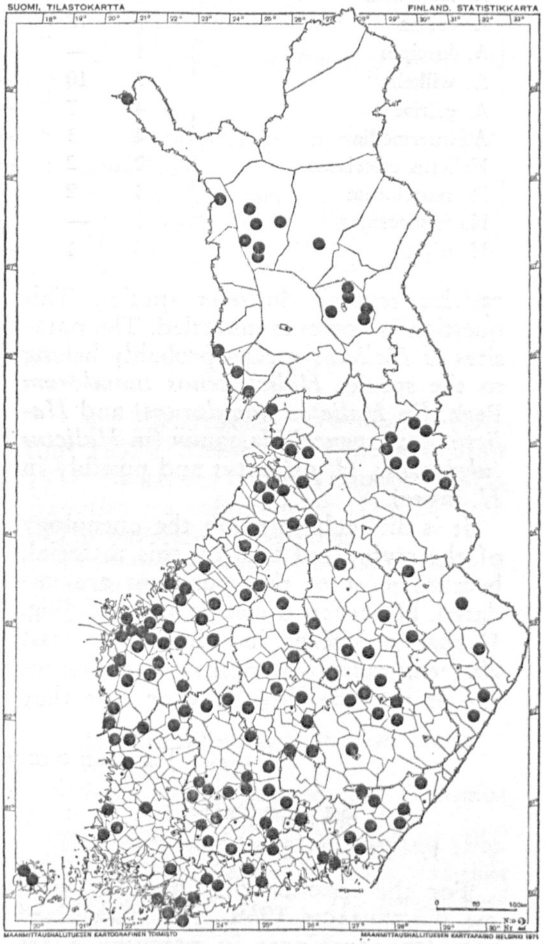
The first unparasitized *J. pellucida* specimens emerge earlier than the parasitized specimens (Fig. 1). The parasites normally emerge from the bodies of the hosts when leafhopper is adult, but *E. tenuicornis* was also observed emerging from the nymphs of eight leafhopper species. The average number of Strepsiptera was about the same (1,1 per host) in male and female leafhoppers, including those parasitized by dryinid wasps (e.g. *Dicondylus lindbergi)* Table 3).

In 11 out of the 40 *Andrena* species found in Finland stylopized specimens (parasitized by Strepsiptera) have been noted. The corresponding numbers in Germany are 89 out of 126 (Kinzelbach 1969). The northernmost observations *(Andrena lapponica)* are from Ks and PsL. The sex ratio of the 158 parasitized Finnish bees is 56 males to 102 females.

The data in Table 2 indicate that stylopized bees are proportionally less frequent in the northern part of the country than in the southern part ($X^2 = 11,47$, $P < 0,01$, df = 3). The number of bees is also much smaller in the north and data from northern Finland are rather meagre. In any case it appears that stylopids may considerably reduce the number of bees, at least in some populations (cf. Jensen 1971).

The whole stylopid material consist of females and pupae found on hosts (there are also many triungulin larvae found on hosts). So far no adult male Strepsiptera parasitizing Hymenoptera have been found in Finland. Since an empty male pupa usually becomes separated from its host, stylopized specimens from which only male Strepsiptera have emerged have evidently escaped notice.

Kinzelbach (1969) assumes that there are several *Stylops* species paratitizing *Andrena* species, but presumably the same *Stylops* species may be able to pa-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MAANMITTAUSHALLITUKSEN KARTOGRAFINEN TOIMISTO
MAANMITTAUSHALLITUKSEN KARTTAPAINO HELSINKI 1971

Fig. 2. Known localities of *Javesella pellucida* parasitized by *Elenchus tenuicornis* in Finland.

Table 3. Number of stylopids in the two sexes of *Javesella pellucida, J. pellucida* parasitized by *Dicondylus lindbergi* and various bee species.

Number of Strepsiptera specimens	1		2		3		4		5	
Sex of host	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
Javesella pellucida	1382	1323	149	149	13	5	1	—	—	1
J. pellucida + D. lindbergi	43	38	4	4	1	1	—	—	—	—
Andrena subopaca	—	1	—	—	—	—	—	—	—	—
A. minutuloides	1	—	—	—	—	—	—	—	—	—
A. cineraria	2	8	—	3	—	1	—	—	—	—
A. ruficrus	—	—	1	—	—	—	—	—	—	—
A. vaga	—	2	1	—	—	—	—	—	—	—
A. lapponica	1	5	—	3	—	—	—	—	—	—
A. fucata	7	18	—	6	—	1	—	—	—	—
A. fuscipes	1	—	—	1	—	—	—	—	—	—
A. wilkella	2	10	—	3	—	1	—	—	—	—
A. gelriae	4	7	—	1	—	—	—	—	—	—
A. intermedia	4	3	—	4	—	—	—	—	—	—
Halictus calcelatus	2	2	—	—	—	—	—	—	—	—
H. tumulorum	3	2	1	2	—	—	—	—	—	—
H. fulvicornis	1	—	—	—	—	—	—	—	—	—
H. niger	—	1	—	—	—	—	—	—	—	—

rasitize several *Andrena* species. This question is however unsettled. The parasites of *Halictus* species probably belong to the species *Halictoxenos tumulorum* Perk. (in *Halictus tumulorum)* and *Halictoxenos spencei* Nassonov (in *Halictus fulvicornis, H. calceatus* and possibly in *H. niger).*

It is difficult to study the phenology of the stylopized bees on this material, because most of the specimens are undated. However, it can be assumed (Fig. 1) that stylopized individuals (at least *Andrena wilkella)* emerge on an average earlier than healthy ones, or that they live for a shorter time than unparasitized individuals. The former assumption is supported by observations by ULRICH (1956) and JENSEN (1971) concerning *Andrena vaga.*

The numbers of stylopids per parasitized bee specimen were higher in the females than the males. According to Table 3, they were as follows:

Andrena ♂♂ $\bar{X}$ 1.12
Andrena ♀♀ $\bar{X}$ 1.34
Halictus ♂♂ $\bar{X}$ 1.14
Halictus ♀♀ $\bar{X}$ 1.50

Taxonomy and records

Stylopidae

1. *Stylops* spp.

For the taxonomy at specific level, see KINZELBACH 1969. The parasitized bees (the provinces in parenthesis are those in which only unparasitized specimens have been found or the southernmost and northernmost of such provinces):

Andrena subopaca Nyl. EK: Kuorekoski ♀ (J. E. Aro); (A—PP, Ks).

A. minutuloides Perk. A: Äppelö ♂ (E. Ölund); (V, U, Kk, EH, ES, LK, PH).

A. cineraria (L.) U: Helsingin pitäjä ♂, ♀, Siuntio ♀; Kk: *Metsäpirtti ♀, *Muolaa ♀, *Sakkola 2 ♀♀, *Uusikirkko ♀; St: Karkku ♀; EH: Messukylä ♀, Pirkkala ♀; ES: Joutseno ♀, Rantasalmi ♀; PS: Riistavesi ♀; (A, V, EK, LK, EP, PH, PK, KP, PP, Ks).

A. ruficrus Nyl. PS: Lapinlahti ♂ (R. Elfving) (A—PP, EnL).

A. vaga Panzer Kk: *Uusikirkko ♀; ES: Rantasalmi ♂, ♀; PS: Kuopio ♀ (A, U, EK, St, EH, LK, EP, PH, PK, Kn, Ks).

A. lapponica Zett. V: Särkisalo ♀, Vihti ♀; U: Pernaja ♀; EH: Hattula 2 ♂♂, ♀, Pirkkala ♀, PS: Kuopio ♀, Siilinjärvi ♀; PK. Liperi ♂; Ks: Kuusamo ♀; *Petsamo ♀; (A—EnL, Li).

A. fucata Smith. V: Karjalohja 2 ♂♂, ♀, Parainen ♀, Perniö ♂, ♀, Särkisalo 2 ♀♀, Uskela ♀; U: Helsingin pitäjä ♀, Pernaja 11 ♀♀; Kk: *Muolaa ♂, *Uusikirkko ♀, *Äyräpää ♀; St: Karkku ♀, EH: Hattula ♀, ♂, Janakkala ♀, Luopioinen ♀, Ylöjärvi 2 ♀♀; ES: Joroinen 4 ♀♀; LK: *Salmi ♀; PS: Kuopio ♀, ♂; ÄK: *Karhumäki ♀; (A, EK, EP, PH, PK, KP, Kn, PP, EnL).

A. fuscipes Kirby Kk: *Uusikirkko ♀, ES: Lauritsala ♂ (A, V, N, EK, St, EH, LK, PS, PK).

A. wilkella Kirby V: Korppoo ♀, Lohja ♂, Perniö ♀, Särkisalo 2 ♂♂, 10 ♀♀, Uskela ♀; U: Helsingin pitäjä ♀, Helsinki ♂, Pernaja ♂, 2 ♀♀, Snappertuna ♀; Kk: *Muolaa ♂, *Valkjärvi ♀; EH: Hattula 7 ♂♂, ♀, Lammi ♂, Pälkäne ♀, Vanaja 4 ♂♂; ES: Joutseno 2 ♂♂, Lappee ♀, Taipalsaari ♀ (A, EK, LK, PS, PK).

A. gelriae v.d. Vecht V: Särkisalo ♂, 2 ♀♀, Perniö 2 ♂♂, ♀; U: Pernaja ♀; Kk: *Metsäpirtti ♂, 2 ♀♀, *Muolaa 2 ♂♂, *Uusikirkko ♂, *Valkjärvi ♀; EH: Hattula ♂, Janakkala 3 ♂♂, Vanaja ♀ (A, EK, ES, LK, PS, PK).

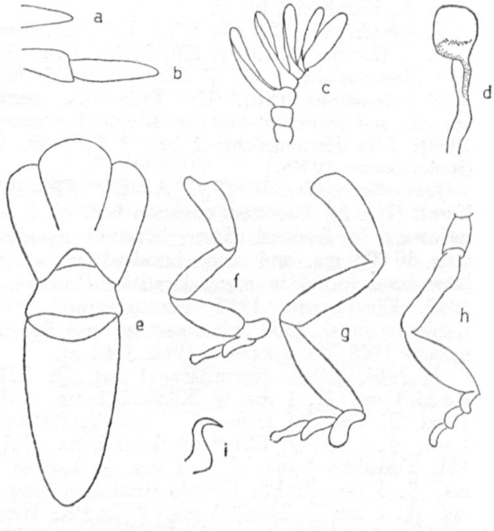

Fig. 3. *Halictophagus curtisii* male: a mandible; b palpus; c antenna; d forewing; e metathorax; f front leg; g middle leg; h hind leg; i lateral view of aedeagus.

A. intermedia Thom. V: Perniö 2 ♀♀; U: Espoo ♀, Pernaja ♂; Kk: *Muolaa 3 ♂♂, ♀, EH: Hattula ♂; ES: Joutseno 2 ♀♀, PK: Liperi ♀; (A, EK, LK, EP, PS, KP, Kn, Ks).

2. *Halictoxenos spencei* (Nassonov 1893) (*Halictophagus curtisi* Nassonov 1893, *Halictoxenos cylindrici* Perkins 1918, *Halictoxenos calceati* Noskiewicz et Poluszynski 1924).

The parasitized bees:

Halictus calceatus (Scop.) V: Parainen 2 ♂♂ (E. Reuter) (A—Ks, KemL, PsL).

H. fulvicornis (Kirby). Fennia (?) ♂ (E. Bergroth) (A—PS, PK).

H. niger Viereck — V: Perniö ♀ (A—KemL, InL).

3. *Halictoxenos tumulorum* Perkins 1918

The parasitized bees:

Halictus tumulorum (L.) Kk: *Kivennapa 2 ♀♀, *Metsäpirtti ♀, *Muolaa ♀, *Uusikirkko ♂, 2 ♀♀; ES: Rantasalmi ♀ (A—Kn, PP).

Xenidae

4. *Pseudoxenos sphecidarum* (Dufour 1837) (*Xenos sphecidarum* Dufour 1837, *Paraxenos sieboldii* Saunders 1872, *Eupathocera sphecidarum* (Duf.).

The parasitized sphecids:

Ammophila pubescens (Curt.) Kk: *Rautu ♀ (J. Sahlberg) (EK).

Halictophagidae

5. *Halictophagus curtisii* Dale (CURTIS 1832)

Male. U: Helsinki rural commune (Tikkurila) 27. V 1963 ♂, 29. VI 1967 ♂.

The specimens found in Finland (Fig. 3) differ from the species *Halictophagus tettigometrae* Silvestri, *H. languedoci* Abdul-Nour and *H. agalliae* Abdul-

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* Soviet territory

Nour described from Europe (Silvestri 1941, Abdul-Nour 1969, 1970, 1971), e.g. in the rounded swelling just before the apex of the penis. Only a few species of this genus have this feature, e.g. *H. barberi* (Pierce) described from New Mexico, *H. membraciphaga* (Subramaniam) described from India and *H. chinensis* Bohart described from China (Bohart 1943). The penis of *H. curtisii* is not described and it is doubtful whether the specimens found in Finland belong to this species. The Finnish specimens differ from the descriptions of Dale (Curtis 1832), Heqvist (1958) and Kinzelbach (1969), inter alia, in regard to the breadth of the prescutum and the length of the fifth and sixth flabella of the antenna. According to the description of *H. curtisii* (Curtis 1832), the third segment of the antenna should also be long and the forewing an ovate club.

Elenchidae

6. *Elenchus tenuicornis* (Kirby 1815) (*Stylops tenuicornis* Kirby 1815, *Elenchus walkeri* Curtis 1829, *Pseudelenchus carpathicus* Ogloblin 1925, *Elenchinus delphacophilus* Ahlberg 1925, *Elenchinus chlorionae* Lindberg 1939)

Male. U: Tvärminne 20. VI—20. VII, many ♂♂ (Lindberg 1939), Tikkurila 25. VI—9. VIII, 33 ♂♂; EH: Pälkäne; ES: Mikkeli 21. VI—19. VII, 16 ♂♂, 26. IX, 1 ♂; EP: Sulva, Mustasaari and Laihia 22. VI—27. VII, over 600 ♂♂ (Raatikainen 1967 a) Vähäkyrö, Isokyrö, Ylistaro; PP: Rovaniemi rural commune (Apukka), 23. VI—14. VII, 7 ♂♂; InL: Inari (Muddusniemi), 24. VII—18. VIII, 5 ♂♂.

The parasitized delphacids:

Chloriona smaragdula (St.). U: Tvärminne some nymphs and many adults (Lindberg 1939); PK: Hammaslahti 1 br. ♀ (Kontkanen 1950).

C. glaucescens Fb. U: Tvärminne some nymphs and many adults (Lindberg 1939).

Stiroma bicarinata (H.-S.). V: Karjaa 1 br. ♂ (Lindberg 1939); U: Hanko 1 br. ♀ (Lindberg 1939); St: Siikainen 1 br. ♀; EH: Pirkkala 1 ma. ♂, Lempäälä 1 ma. ♂, Luopioinen 1 br. ♀; ES: Luumäki 1 br. ♂, Ruokolahti 1 br. ♂, Joutsa 1 br. ♀; EP: Laihia some nymphs and many br. and some ma. adults, Isokyrö 1 nymph, 1 br. ♂, 1 br. ♀, Vöyri 4 nymphs; PH: Keuruu 1 nymph, 1 br ♂, 1 br. ♀, Viitasaari 1 nymph, 1 br. ♂, 1 br. ♀; PS: Nilsiä 3 nymphs, Vieremä 1 br. ♂, 1 br. ♀; PK: Hammaslahti 2 br. ♀♀ (Kontkanen 1950), Valtimo 1 nymph; KP: Pietarsaari rural commune 1 br. ♀, Reisjärvi 1 br. ♂, 2 br. ♀♀, Oulainen 1 br. ♂, 1 br. ♀, Kestilä 1 nymph, 1 br. ♂, Paavola 2 br. ♂♂, 1 br. ♀; PP: Muhos 2 br. ♂♂, 2 br. ♀♀, Kiiminki 2 br ♀♀, Ylikiiminki 1 br. ♂, 2 br. ♀♀, Alatornio 8 nymphs, 3 br. ♂♂, 6 br. ♀♀; KemL: Kittilä 3 nymphs.

S. affinis Fb. EP: Maksamaa 1 br. ♂, 1 br. ♀ (Lindberg 1943).

Dicranotropis hamata (Bh.). U: Tvärminne many nymphs and adults (Lindberg 1949); EH: Pirkkala 1 br. ♂, 2 br. ♀♀ (Lindberg 1939); EP: Siipyy 1 ma. ♂, Laihia 1 ma. ♀; PK: Hammaslahti 1 br. ♂ (Kontkanen 1950), Eno 1 ma. ♂.

Criomorphus borealis (J. Sb.). PK: Hammaslahti 1 br. ♀ (Kontkanen 1950).

C. moestus (Bh.) KemL: Kittilä 1 br. ♂, 2 br. ♀♀.

Megadelphax sordidula (St.). EK: Sippola 1 ma. ♂, 1 br. ♂; EH: Pälkäne 1 ma. ♀, (Raatikainen 1960), Pirkkala 1 ma. ♂; EP: Laihia 3 nymphs some br. and ma. adults (Raatikainen 1960, 1967a, 1970b); PS: Kuopio rural commune 1 br. ♀, Nilsiä 1 nymph; PK: Valtimo 1 br. ♀.

Muirodelphax denticauda (Bh.). PP: Muhos 1 br. ♂, Kiiminki 1 br. ♀.

Xanthodelphax flaveola (Fl.). U: Tvärminne 1 br. ♀ (Lindberg 1939); EP: Laihia 1 br. ♂; PK: Hammaslahti 1 br. ♀ (Kontkanen 1950).

X. straminea (St.). U: Tvärminne some nymphs and many br. and ma. adults (Lindberg 1949); PK: Hammaslahti 2 br. ♂♂, 1 br. ♀ (Kontkanen 1950).

Javesella pellucida (F.). A—ES, EP—PP, KemL (Fig. 2). The most common host of *E. tenuicornis* in Finland. Some hundred nymphs, over 30 000 ma. and some hundred br. adults have been found in many localities (Lindberg 1949, Kontkanen 1950, Heikinheimo 1957, Kanervo et al. 1957, Heikinheimo and Raatikainen 1962, Raatikainen 1966, 1967 a).

J. dubia (Kb.). Nurmijärvi 1 ma. ♀; EH: Koski 1 ma. ♂, 1 ma. ♀, Kärkölä 2 ma. ♂♂, 1 ma. ♀, Vesilahti 1 ma. ♂, 1 ma. ♀, Pirkkala 1 ma. ♂, 1 ma. ♀; ES: Ruokolahti 2 ma. ♂♂; PH: Toivakka 5 ma. ♂♂, 1 ma. ♀, Laukaa 1 ma. ♂, 1 ma. ♀; PS: Kuopio rural commune 1 ma. ♂, 1 ma. ♀, Nilsiä 3 ma. ♂♂; PK: Hammaslahti 2 br. ♀♀, 1 ma. ♀ (Kontkanen 1950), Valtimo 3 ma. ♂♂, 2 ma. ♀♀; Kn: Suomussalmi many ma. and br. ♂♂ and ♀♀; PP: Ylikiiminki some ma. ♂♂ and ♀♀, 1 br. ♀, Kemijärvi rural commune 6 ma. ♂♂, 2 br. ♂♂, 2 ma. ♀♀, 3 br. ♀♀.

J. obscurella (Bh.). EH: Pälkäne 2 ma. adults; EP: Peräseinäjoki 3 ma. adults, Laihia some ma. ♂♂ and ma. ♀♀, Ylistaro some ma. ♂♂ and ma. ♀♀; PH: Pihtipudas 1 ma. ♂, Keitele 5 ma. ♂♂, 3 ma. ♀♀; PS: Nilsiä 2 ma. ♂♂, 1 ma. ♀, Vieremä many ma. ♂♂ and ♀♀; PK: Valtimo many ma. ♂♂ and ♀♀; KP: Alajärvi 1 ma. ♂, Purmo 1 ma. ♀, Lestijärvi 1 ma. ♂, Pietarsaari rural commune 1 ma. ♀, Kälviä 1 ma. ♂, 2 ma. ♀♀, Kannus 4 ma. ♂♂, Nivala 3 ma. ♂♂, Oulainen 2 ma. ♀♀, Revonlahti 1 ma. ♀, Paavola 3 ma. ♂♂, 3 ma. ♀♀; Kn: Suomussalmi 1 ma. ♀, 1 br. ♂, 3 br. ♀♀; PP: Liminka 2 ma. ♂♂, 3 ma. ♀♀, Muhos 4 ma. ♂♂, 2 ma. ♀♀, Ylikiiminki 4 ma. ♂♂, Alatornio 2 ma. ♀♀, Kemijärvi rural commune 1 ma. ♂, 2 br. ♂♂, 3 br. ♀♀.

J. discolor (Bh.). V: Pohja 2 ma. ♂♂, Lohja 1 ma. ♂; U: Tammisaari 1 ma. ♂, (all in Lindberg 1939); ES: Mikkeli rural commune 2 ma. ♂♂, 2 ma. ♀♀; PK: Hammaslahti 1 ma. ♀ (Kontkanen 1950), PP: Ylikiiminki 1 br. ♂.

J. forcipata (Bh.). V: Pohja 1 br. ♂ (Lindberg 1939); KemL: Kittilä 1 br. ♂.

Ribautodelphax collina (Bh.). PK: Hammaslahti 1 br. ♂, 1 br. ♀ (Kontkanen 1950).

R. albostriata (Fb.). EP: Petolahti 6 nymphs, 2 ♂♂, 4 ♀♀ (Lindberg 1943); PK: Valtimo 1 br. ♂; KemL: Kittilä 1 br. ♂.

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References

Abdul-Nour, H. 1969: Une nouvelle espèce de Strepsiptère parasite de Jassidae (Hom. Auchen.): Halictophagus languedoci, n. sp. — Ann. Soc. Entomol. France (N. S.) 5: 361—369.

—»— 1970: Les Strepsiptères parasites d'Homoptères dans le sud de la France. Description d'une nouvelle espèce: Halictophagus agalliae n. sp. — Ann. Zool. Écol. Animal. 2:339—344.

—»— 1971: Contribution a l'etude des parasites d'Homopteres Auchenorrhynques du sud de la France: Dryinidae (Hymenopteres) et Strepsipteres. — 154 pp. These Academie de Montpellier. Universite des Sciences et Techniques du Languedoc.

Ahlberg, O. & Kontuniemi, T. 1957: Kierresiipiset — vastalause sukupuolten yhdenvertaisuutta vastaan. — In Kontuniemi, T. Suuri hyönteiskirja: 337—341. Helsinki.

Bohart, R. M. 1943: New species of Halictophagus with a key to the genus in North America (Strepsiptera, Halictophagidae). — Ann. Entomol. Soc. America 36:341—359.

Curtis, J. 1832: Halictophagus Curtisii Dole. — Brit. Entomol. 3. Fol. 433, London 1862.

Heikinheimo, O. 1957: Dicondylus lindbergi sp. n. (Hym., Dryinidae), a natural enemy of Delphacodes pellucida (F.). — Ann. Entomol. Fennici 23:77—85.

Heikinheimo, O. & Raatikainen, M. 1962: Comparison of suction and netting methods in population investigations concerning the fauna of grass leys and cereal fields, particularly in those concerning the leafhopper, Calligypona pellucida (F.). — Publ. Finnish State Agric. Res. Board 191:1—31.

Hellén, W. 1921, 1923: Veränderungen in der Kenntnis der Insektenfauna Finnlands bis zum Jahr 1921. — Notulae Entomol. 1: 120—128, 3:60—64.

—»— 1925: (Diskusion.) — Notulae Entomol. 5:124.

—»— 1935 a: Fynd av Strepsiptera i Finland. — Notulae Entomol. 15:110—111.

—»— 1935 b: Strepsiptera. — Enumeratio Insectorum Fenniae IV:14. Helsinki.

—»— 1936: Verzeichnis der in den Jahren 1931 —1935 für die Fauna Finnlands neu hinzugekommenen Insektenarten. — Notulae Entomol. 16:43—63.

Heqvist, K.-J. 1958: Fynd av en representant för Halictophagidae, en för vårt land ny familj inom ordningen Strepsiptera. — Entomol. Tidskr. 79:61—65.

Jensen, O. 1971: Iagtagelser over en koloni af stylopiserede bier, Andrena vaga Panz., i Nordsjælland (Strepsiptera & Hymenoptera, Apidae). — Entomol. Meddel. 39:90—95.

Kinzelbach, R. K. 1969: Stylopidae, Fächerflügler. — In: Freude, H., Harde, K. W. & Lohse, G. A. Die Käfer Mitteleuropas 8:139—159, Krefeld.

Kanervo, V., Heikinheimo, O., Raatikainen, M, & Tinnilä, A. 1957: The leafhopper

Delphacodes pellucida (F.) (Hom., Auchenorrhyncha) as the cause and distributor of the damage to oats in Finland. — Publ. Finnish State Agric. Res. Board 160:1—56.

Kontkanen, P. 1950: Notes on the parasites of leafhoppers in North Karelia. — Ann. Entomol. Fennici 16:101—109.

Lindberg, H. 1925: [Stritlarver sannolikt angripna av vridvingar (Strepsiptera).] — Notulae Entomol. 5: 124.

—»— 1936: Några drag ur på stritar (Cikader) levande vridvingars (Strepsiptera) biologi. — Pohjoismainen (19. Skandinaavinen) luonnontutkijain kokous Helsingissä 1936: 494—495.

—»— 1939: Der Parasitismus der auf Chloriona -Arten (Homoptera Cicadina) lebenden Strepsiptere Elenchinus chlorinae n. sp. sowie die Einwirkung derselben auf ihren Wirt. — Acta Zool. Fennica 22:1—179.

—»— 1943: Äussere morphologische Veränderungen infolge Stylopisierung bei einigen Delphaciden (Hom., Cicad.). — Notulae Entomol. 23:144—156.

—»— 1949: On stylopisation of Araeopids. Acta Zool. Fennica 57:1—37.

—»— 1960: Die Strepsiptere Elenchus tenuicornis Kirby und ihre Wirte Calligypona propinqua (Fieb.) und C. anthracina (Horv.) (Homoptera Araeopidae): — Comment. Biol. 23 (6):1—10.

Löken, A. 1967. A stylopized female of Andrena fucata Smith (Streps. — Hym.). — Opuscula Entomol. 32:93—96.

Mäklin, F. W. 1866: Om Strepsiptera och deras förekommande i Finland. — Öfversikt av Finsk Vetenskaps Soc. Förhandl. 8:84—92.

—»— 1867: Ytterligare om Strepsiptera och deras förekommande i Finland. — Öfversigt av Finsk Vetenskaps Soc. Förhandl. 9:66—69.

Nuorteva, P. 1957: Kierresiipiset. — Suomen eläinkuvasto II: 395—396. Porvoo.

Pekkarinen, A. 1971: Twisted-winged parasites (Strepsiptera) of bees (Hym., Apidae) in Finland (a preliminary report). — Acta Entomol. Fennica 28:40—41.

Raatikainen, M. 1960: The biology of Calligypona sordidula (Stål) (Hom., Auchenorrhyncha). — Ann. Entomol. Fennici 26: 229—242.

—»— 1966: The effect of different sexes of the parasite Elenchus tenuicornis (Kirby) on the morphology of the adult Javesella pellucida (F.) (Hom., Delphacidae). — Ann. Entomol. Fennici 32:138—146.

—»— 1967 a: Bionomics, enemies and population dynamics of Javesella pellucida (F.) (Hom., Delphacidae). — Ann. Agric. Fenniae 6 (suppl 2):1—149.

—»— 1967 b: [Elenchidae (Strepsiptera). Arten, Ökologie und Einwirkungen auf den Wirt.]. — Ann. Entomol. Fennici 33:276.

—»— 1970 a: [Halictophagus ?curtisi Dale (Strepsiptera), en för landet ny strepsipter.]. — Notulae Entomol. 50:135.

—»— 1970 b: Ecology and fluctiations in abundance of Megadelphax sordidula (Stål) (Hom., Delphacidae). — Ann. Agric. Fenniae 9:315—324.

—»— 1972: Dispersal of leafhoppers and their enemies to oatfields. — Ann. Agric. Fenniae 11:146—153.

Raatikainen, M. & Heikinheimo, O. 1973: The flying times of Strepsiptera males at different latitudes in Finland. — Ann. Entomol. Fenniae. In print.

Raatikainen, M. & Vasarainen, A. 1964: Biology of Dicranotropis hamata (Boh.) (Hom., Araeopidae). — Ann. Agric. Fenniae 3:311—323.

Silvestri, F. 1941: Studi sugli Strepsiptera. II Descrizione, biologica e sviluppo postembrionale dell' Halictophagus tettigometrae Silv. — Boll. Lab. Zool. Portici 32: 11—48.

Ulrich, W. 1936: Fächerflügler, Strepsiptera Kirby (1813). — In: Tierwelt Mitteleuropas 5:, XIII 1—26, Leipzig.

—»— 1956. Unsere Strepsipteren-Arbeiten. — Zool. Beitr. N. F. 2:177—255.

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Coleoptera from North-East Africa. Buprestidae
(Zoological contribution from the Finnish expeditions to the Sudan no. 32)

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Abstract

List of 84 species collected by the Finnish Zoological expeditions to the Sudan, Ethiopia, Somalia, South Yemen, Egypt and Tunisia in 1961—1964. New species described are *Anthaxia adenensis* from South Yemen, *Acmaeoderella pectinata* from South Yemen, *A. pavliceki* from Sudan, *Aphanisticus bulbatus* from South Yemen, *Trachys nigra* from Sudan and *Sphenoptera planidorsa* from Ethiopia.

The material collected by the Finnish expeditions to the Sudan in 1961—1964 contains 224 specimens of Buprestidae. There were 19 genera represented, with 84 species, six of which prowed to be new. The material is deposited in the Entmological Department of the Zoological Museum, Helsingfors.

I wish to thank the Zoological Museum, Helsingfors, and especially Dr. R. Linnavuori and Dr. H. Silfverberg for the loan of this material. I also wish to thank Dr. A. Descarpentries of the Muséum National, Paris, for the loan of some types.

List of species

Sternocera castanea castanea (Olivier, 1970)

Sudan, nr. Dibeira, 6—13.10.1962, Linnavuori lgt., 5 exx. Sudan, Dibeira, Wadi Halfa distr., 3—6.10.1962, ad lucem, S. Panelius lgt., 7 exx. Sudan, Dibeira, Wadi Halfa distr., 26. 9.1962, S. Panelius lgt., 1 ex. Sudan, Wadi Halfa distr., 25.9.1962, on *Acacia albida,* S. Panelius lgt., 7 exx.

Distribution: Egypt, Libya, Sudan, Ethiopia, Kenya, S. Arabia, Senegal, Somalia.

Host plant: *Pithecolobium dulce* Benth. (Lewis 1964), *Acacia* sp. (Descarpentries & Mateu 1965).

Sternocera syriaca revoili Fairmaire, 1884.

Somalia, nr. Hargeisa, 23—28.6.1963, Linnavuori lgt., 1 ex.

Distribution: Somalia.

Julodis caillaudi (Latreille, 1828)

Sudan, Dibeira, Wadi Halfa distr., 9—12.9. 1962, S. Panelius lgt., 5 exx.; Wadi Halfa, 23—25.9.1962, S. Panelius lgt., 1 ex.; nr Dibeira, 6—13.10.1962, Linnavuori lgt., 6 exx.; Atbara, 19.10.1962, S. Panelius lgt., 4 exx.

Distribution: Senegal, Algeria, Egypt, Libya, Sudan, Ethiopia, Arabia, Persia.

Host plant: *Acacia sp.* (Descarpentries & Mateu 1965).

Julodis fimbriata Klug, 1829

Sudan, Ed Damer-Shendi, 1—2.11.1962, Linnavuori lgt, 1 ex.

Distribution: Libya, Sudan, Ethiopia, Somalia, Arabia, E. Africa (Massai).

Host plant: *Acacia mellifera* (Vahl.) (Descarpentries & Mateu 1965).

Ptychomus politiformis (Obenberger, 1916)

Sudan, Equatoria, Tambura-Wau, 25—26.

4.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Uganda, Kenya.

Acmaeodera (Paracmaeodera) elevata Klug, 1829

Sudan, Wadi Halfa, 24.9.1962, S. Panelius lgt, 1 ex.; Shendi-Wad Hassuna, 5—6.11.1961, Linnavuori lgt., 1 ex.; Blue Nile, Ingassana Mts., 17—22.11.1962, Linnavuori lgt., 1 ex.

Somalia, Borama-Silili, 29.6.1963, Linnavuori lgt., 1 ex.

Distribution: Libya, Egypt, Sudan, Ethiopia, Somalia, Arabia, Sinai.

Host plant: *Acacia raddiana* Savi, *A. adstringens* (Schum. et Thann.) (DESCARPENTRIES & MATEU 1965).

Acmaeodera (s.str.) *sanguineosignata* C. et G., 1835

Ethiopia, Omo Valley, 12.6.1963, Linnavuori lgt., 1 ex.

Distribution: Sudan, Ethiopia.

Acmaeoderella boviei (Obenberger, 1924)

Sudan, Blue Nile, Ingassana Mts., 17—22.11. 1962, Linnavuori lgt, 1 ex.; Kordofan, El Obeid, 21.2.1963, ad lucem, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Zaire.

Acmaeoderella katangae (Kerremans, 1913)

Ethiopia, Dessie-Karakore, 1.6.1963, Linnavuori lgt., 1 ex.

Distribution: Zaire.

Acmaeoderella mirei (Descarpentries et Mateu, 1965)

Sudan, Shendi-Wadi Hassuna, 5—6.11.1962, Linnavuori lgt., 1 ex.

Distribution: Chad, Ennedi Mts.

Host plant: *Acacia raddiana* Savi DESCARPENTRIES & MATEU (1965).

Acmaeoderella pectinata sp.n.

Body cylindrical, dark brown. Head and whole ventral surface of body covered with dense, oval, snow-white scales; pronotum and elytra covered with somewhat sparser white and yellow scales. Legs (except for tarsi) also covered with white scales.

Head wide and flat with faint narrow groove between eyes, covered with snow-white scales. Antennae short and robust, serrated from the fifth segment. First antennal segment twice as long as wide, enlarged apically. Antennae entirely black with very fine, white hairs; last three segments overlapping anterior margin of pronotum. Eyes oval; clypeus hairless, with straight anterior margin.

Pronotum as wide as long, bell-shaped, widest in the first third and slightly sinuate before the posterior angles. Anterior margin lobate medially, posterior margin straight with three small notches. Anterior margin, basal third and lateral margins covered with white scales, rest of pronotum covered with yellow ones, with a small longitudinal depression without scales medially at base. Pronotum laterally only slightly marginate by the feebly developed obtuse keel. Legs short, black, covered with white scales; tarsi scaleless, bearing several white hairs on dorsal surface. Claws basally with obtuse spine.

Elytra 2.3 times as long as wide at base, nearly parallel and rounded together at the apex, bearing grooves composed of deep punctures. Interstriae covered with dense, oval, white and yellow scales. The eighth interstria in the posterior third bears a high ridge, composed of twelve sharp spines .

Aedeagus ending obtusely, with membraneous apex, parameres pointed, ends of parameres curved outwards.

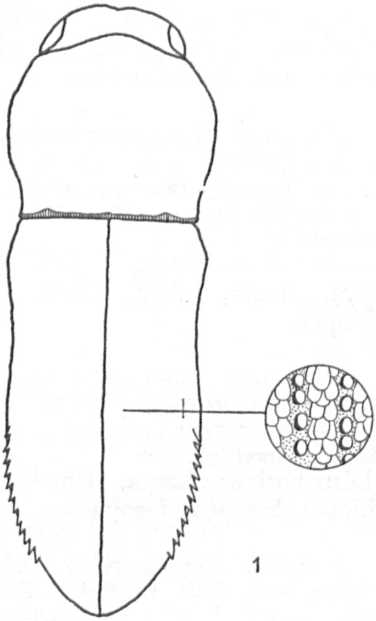
Length: 5.0 mm; width: 1.9 mm.

Holotype: ♂, West Aden Protectorate (= South Yemen), nr. Lahej, 9—15. 7.1963, Linnavuori lgt.

The holotype No 15082 is deposited in the Zoological Museum, Helsingfors.

Acmaeoderella pavliceki sp.n.

Body subparallel, vaulted; main coloration black. Elytra with many irregular yellow spots. Whole ventral surface and legs black. The species is simi-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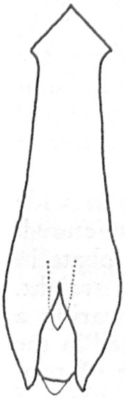
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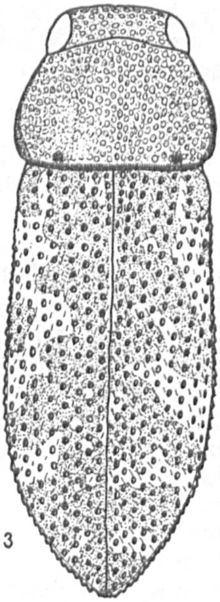
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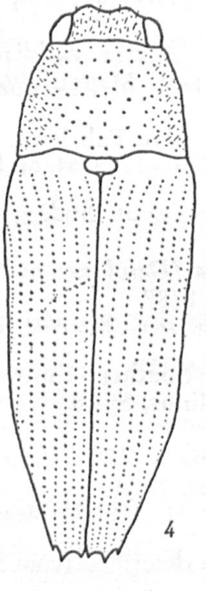
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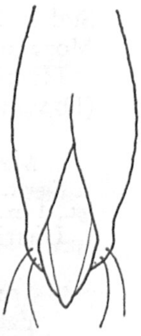
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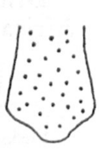
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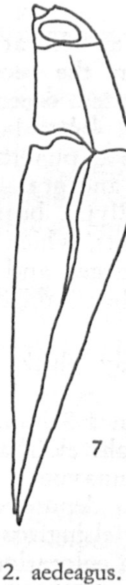
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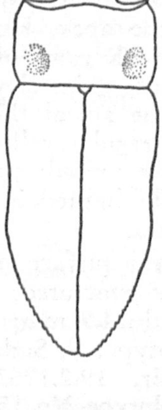
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Figs. 1—2. *Acmaeoderella pectinata* sp. n., 1. dorsal view, 2. aedeagus. Fig. 3. *Acmaeoderella pavliceki* sp. n., dorsal view. — Figs. 4—7. *Sphenoptera (Tropeopeltis) planidorsa* sp. n., 4. dorsal view, 5. aedeagus, 6. prosternal lobe, 7. lateral view. — Fig. 8. *Anthaxia* (s. str.) *adenensis* sp. n., dorsal view.

lar in coloration to *A. atomosparsa* Fairm.

Head flat, black, with very faint groove between the eyes, which are large and oval. Whole head coarsely punctured, with sparse and very delicate, short, gray hairs. Antennae black, enlarged on the outer surface from the sixth segment and reaching to middle of pronotum. Clypeus slightly punctured and slightly sinuate on the anterior margin.

Pronotum vaulted, 1.8 times as wide as long, hairless and coarsely punctured. Anterior margin of pronotum lobate in the middle; posterior margin straight. Lateral margin of pronotum bearing a narrow groove, which is enlarged in the posterior pronotal angles. Base of pronotum somewhat wider than base of elytra. On either side of pronotum a shallow depression at the base. Legs short, slender, tibiae straight and bearing a row of delicate bristles on the outer surface. Tarsi longer than half the tibia, last tarsal segment as long as the rest of the tarsus. Claws yellow, medially with a large spine.

Elytra 2.1 times as long as wide at the base, slightly enlarged in the second third; lateral margins serrated, especially at the apex. Humeral lobes large, elytra with rows of coarse punctures. Outer interstriae elevated and granulated in the apical third. Elytra bearing many irregular yellow spots, which are variously united; spots larger and indistinctly limited in the basal third of the elytra.

Ventral surface of body black and coarsely punctured.

Length: 4.9 mm; width: 1.8 mm.

Holotype: ♀, Sudan, Bahr el Ghazal, Godatair, 19.2.1963, Linnavuori lgt. The holotype No 15083 is deposited in the Zoological Museum, Helsingfors.

This species is similar in coloration to *A. atomosparsa Fairm.* and in body shape to *A. rubromaculata* Luc. *A pavliceki* differs from *A. atomosparsa* in body shape and from *A. rubromaculata* in the shorter antennae, the width and sculpturing of the pronotum, which is hairless, and the coloration.

Psiloptera (Lampetis) mimosae Klug, 1829

Sudan, Erkowit, 19.4.1964, J. Kaisila lgt., 1 ex.; Blue Nile, Ingassana Mts., 17—22.11.1962, Linnavuori lgt., 1 ex.

Distribution: Syria, Persia, Arabia, Egypt, Sudan, Libya, Chad, Algeria, Ethiopia.

Psiloptera (Damarsila) biocnlata biocnlata (Olivier, 1790)

Sudan, Blue Nile, Ingassana Mts., 17—22.11.1962, Linnavuori lgt., 1 ex.

Distribution: Libya, Chad, Sudan, Ethiopia, Somalia, Kenya.

Steraspis speciosa Klug, 1829

Sudan, Wadi Halfa, 1.4.1964, J. Kaisila lgt., 3 exx.; Shendi, 2—5.11.1962, Linnavuori lgt., 1 ex.

Distribution: Libya, Egypt, Chad, Sudan, Ethiopia, Arabia, Sinai, Somalia, Mozambique.

Host plant: *Acacia raddiana* Savi (Descarpentries & Mateu 1965).

Steraspis scabra Fabricius, 1774

Egypt, Asswan, 21—22.3.1964, M. Meinander lgt., 1 ex.

Distribution: Egypt, Sudan, Chad.

Spenoptera (Deudora) rauca Fabricius, 1787

Tunisia, nr. Kairouan, 22.8.1962, Linnavuori lgt., 2 exx.

Distribution: Southern Europe, North Africa, Asia Minor, Syria.

Sphenoptera (Hoplistura) klugi Obenberger, 1924

Sudan, Erkowit, 21.4.1964, M. Meinander lgt., 1 ex.

Distribution: described from S. Egypt.

Sphenoptera (Hoplistura) erythreina Kerremans, 1906

Sudan, Kassala-Haiya, 1—3.12.1962, Linnavuori lgt., 1 ex.

Distribution: Eritrea, Ethiopia.

Sphenoptera (Hoplistura) tumida Jakolev, 1901

Sudan, Equatoria, Ibba-Yambio, 16.4.1963, Linnavuori lgt., 1 ex.

Distribution: Sierra Leone, Togo, Congo, Ethiopia.

Sphenoptera (Hoplistura) pharia Chevrolat, 1837

Sudan, Erkowit, 21.4.1964, M. Meinander lgt., 5 exx.

Eritrea, Asmara, 31.5.1963, Linnavuori lgt., 1 ex.

Distribution: Egypt, Sudan.

Sphenoptera (Hoplistura) neglecta neglecta Klug, 1835

Sudan, Dibeira, Wadi Halfa distr., 9—12.10. 1962, S. Panelius lgt., 1 ex,; Dibeira, Wadi Halfa distr., 28—30.9.1962, S. Panelius lgt., 3 exx.; nr. Dibeira, 6—13.10.1962, Linnavuori lgt., 4 exx.; Equatoria, Mundri-Lalyo, 25—26.2.1963, Linnavuori lgt., 1 ex.

Ethiopia, Agheresalam, 7.6.1963, Linnavuori lgt., 1 ex.; Belleta Forest, 13—14.6.1963, Linnavuori lgt, 1 ex.; Mt.Maigudo, 16—17.6.1963, Linnavuori lgt, 1 ex.

Wes Aden Prot. (= South Yemen), nr. Lahej, ad lucem, 1.7.1963, Linnavuori lgt., 1 ex.

Distribution: Egypt, Sudan, Ethiopia, Kenya.

Sphenoptera (Hoplistura) dongalensis Klug, 1829

Eritrea, Massawa, 27—30.5.1963, Linnavuori lgt., 1 ex.

Ethiopia, nr. Harrar, 22—23.6.1963, Linnavuori lgt., 1 ex.

Distribution: Egypt, Libya, Sudan.

Sphenoptera (Hoplistura) sudanicola Obenberger, 1927

Sudan, Blue Nile, Ingassana Mts., 17—22.11. 1962, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: described from Sudan.

Sphenoptera (Hoplistura) kristenseni Obenberger, 1926

Sudan, Ed Damer, 27—30.10.1962, Linnavuori lgt., 1 ex.; Atbara, 22.10.1962, S. Panelius lgt., 1 ex.

Ethiopia, Agheresalam, 7. 6. 1963, Linnavuori lgt., 1 ex. Compared with holotype.

Distribution: described from Ethiopia.

Sphenoptera (Hoplistura) eucephala Obenberger,1926

Sudan, Ethiopia, Torit-Kapotea, 26.3.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: holotype labelled »Africa or.».

Sphenoptera (Hoplistura) harrarensis Obenberger, 1926

Sudan, Blue Nile, Singa-Roseiras, 15—17.11. 1962, Linnavuori lgt, 1 ex., compared with holotype.

Distribution: Sudan, Ethiopia.

Sphenoptera (Hoplistura) khartoumensis Obenberger, 1927

Sudan, Dibeira, Wadi Halfa Distr., 28—30.9. 1962, S. Panelius lgt., 1 ex., compared with holotype.

Distribution: S. Egypt, Sudan.

Sphenoptera (Hoplistura) heyrovskyi Obenberger, 1924

Sudan, Blue Nile, Ingassana Mts., 17—22.11. 1962, Linnavuori lgt., 3 exx., compared with holotype.

Distribution: Egypt, Libya, Sudan.

Sphenoptera (Hoplistura) quadraticollis Gerstaecker, 1871

Sudan, Dibeira, Wadi Halfa Distr., 28—30.9. 1962, S. Panelius lgt, 1 ex.

Distribution: Libya, Sudan, Kenya, Tanzania, Somalia.

Sphenoptera (Hoplistura) gossypii Cotes, 1891

Sudan, Kassala, Jebel Elba, 10—14.10.1962, Linnavuori lgt., 1 ex.; Equatoria, Juba-Terakeka, Linnavuori lgt., 1 ex.

Distribution: Senegal, Sudan, Kenya, India, Ceylon, Burma.

Sphenoptera (Hoplistura) gordoni Obenberger, 1927

Ethiopia, nr. Lake Zwai, 6.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Sudan, Egypt.

Sphenoptera (Tropeopeltis) fulgens fulgens Gory, 1842

Egypt, Cairo, 3—18.9.1962, Linnavuori lgt., 1 ex.

Distribution: Egypt, Libya, Sudan, Ethiopia, Senegal.

Sphenoptera (Tropeopeltis) planidorsa sp.n.

Body flat, dark bronze; pronotum with very faint green lustre. Legs almost black. Ventral surface of body black with faint metallic lustre, covered with short grey hairs. This species is similar to *S. (T.) poriensis* Obnb. and *S. (T.) ennediana* Desc. et Mateu.

Head flat; frons with shallow depression. Antennal lobes large and obtuse. Clypeus and labrum sinuate on anterior margin. Eyes large and oval. First antennal segment robust, 2.5 times as long as wide; second antennal segment small, almost globular; third antennal segment slender, twice as long as the second; fourth antennal segment 1.3 times as long as third; 4th—11th segments serrated on the outer margin. Whole head deeply punctured and covered with short, sparse and very fine grey hairs. Pronotum 1.5 times as wide as long, medially flat. Anterior margin of pronotum slightly lobate medially, posterior margin twice intended. Pronotum sharply marginate laterally except in the anterior fifth. Whole pronotum coarsely punctured, sides bearing sparse and delicate grey hairs. Posterior part of pronotum with a shallow depression before the scutellum. Metasternal lobe flat, coarsely punctured, without lateral grooves. Legs slender, punctured, with delicate sparse grey hairs. Metatibiae with many spines on both the outer and the inner margin; every tibia with two apical spines. First tarsal segment as long as second and third together.

Scutellum twice as wide as long, very faintly punctured.

Elytra 2.2 times as long as wide, with small humeral lobes, and with three sharp apical spines, the middle spine being the longest. Whole elytra slightly punctured, with ridges formed between the deep punctures. The 3rd, 5th and 8th intervals elevated in the apical part.

Ventral surface of body slightly punctured, covered with grey hairs. First abdominal sternite with shallow longitudinal depression in the middle; last sternite rounded and marginate on the apex.

Aedeagus tapering to the apex; each paramere with two apical bristles.

Length: 11.2 mm; width: 3.8 mm.

Holotype: ♂, Ethiopia, Shashamanni, 6—7.6.1963, Linnavuori lgt. Holotype (No 15084) deposited in the Zoological Museum, Helsingfors.

This species is similar to *S. (T.) poriensis* Obnb. and *S. (T.) ennediana* Desc. et Mateu. *S. (T.) planidorsa* differs from the preceeding species in the flatter body, more parallel elytra, flat metasternal lobe and longer first tarsal segment.

Melanophila acuminata Degeer, 1774

Tunisia, Air Draham, 16—18.8.1962, Linnavuori lgt., 24 exx.

Distribution: Europe, North Africa, Siberia, Mongolia, China, North America, Cuba, Haiti.

Host plant: very polyphagous species on many species of genera *Picea, Pinus, Abies, Juniperus, Thuja, Cupressus.*

Anthaxia (Cratomerus) dispar Kerremans, 1898

Sudan, Equatoria, Ibba-Yambio, 16.4.1963, Linnavuori lgt., 1 ex.

Distribution: Transvaal, E. Africa (Lake Victoria, Usambara).

Anthaxia (Haplanthaxia) angustipennis Klug, 1829

Sudan, Wadi Halfa distr., 30.3.1964, J. Kaisila lgt., 4 exx.; Wadi Halfa distr., 5—7.4.1964, J. Kaisila lgt., 3 exx.; Dibeira, Wadi Halfa distr., 31.3.1964, M. Meinander lgt., 1 ex.; Abka, Wadi

Halfa distr., 29.3.—2.4.1964, J. Kaisila lgt., 6 exx.

Distribution: Persia, Arabia, Sinai, Egypt, Sudan, Libya, Chad, Algeria.

Host plant: *Acacia raddiana* Savi (Descarpentries & Mateu 1965) and *Ziziphus spina Christi* L. (Théry 1930).

Anthaxia (Haplanthaxia) pumila Klug, 1829

Sudan, Artinassi, Wadi Halfa distr., 2.4.1964, J. Kaisila lgt., 4 exx.; Wadi Halfa distr., 30.3. 1964, J. Kaisila lgt., 1 ex.; Abka, Wadi Halfa distr., 2.4.1964, M. Meinander lgt., 3 exx.

Distribution: Southern part of Sahara (sahelian zone), Tibesti, Ennedi.

Host plant: *Acacia raddiana* Savi. *A. seyal* Del. (Descarpentries & Mateu 1965), *A. arabica* Willd. (Théry 1930).

Anthaxia (Haplanthaxia) encaustiventris Abeille, 1906

Sudan, Bahr el Ghazal, Wau-Lake Maleit, 21. 2.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: described from Ethiopia.

Anthaxia (Haplanthaxia) magnifrons Abeille, 1907

Sudan, Erkowit, 21.4.1964, M. Meinander lgt., 3 exx.

Ethiopia, Dessie-Karakore, 1.6.1963, Linnavuori lgt., 1 ex.

Distribution: Ethiopia.

Anthaxia (s.str.) *adenensis* sp.n.

Body short, robust, vaulted, brown-bronze; head and pronotum brighter. Whole ventral surface of body bronze, tarsi black with faint green lustre. Anterior part of the head bearing fine, short, white pubescence. Elytra and whole ventral surface of body covered with short, sparse and very fine white hairs.

Head large with shallow punctures and fine microsculpture. Punctures deeper in anterior part of head. Frons with fine, white pubescence; clypeus slightly sinuate on anterior margin; behind the clypeus a wide, shallow depression. Vertex hairless, twice the width of eye. Eyes large and oval. Antennae short and robust, overlapping anterior margin of pronotum in the last four segments, entirely covered with fine, sparse, white pubescence. First antennal segment 2.5 times as long as wide, slightly enlarged apically; second segment small, almost round. Third segment only slightly longer than second. Antennae serrated from the fourth segment.

Pronotum hairless, 1.6 times as long as wide; its anterior margin twice indented, lobate in the middle; posterior margin straight. Anterior margin of pronotum of about the same width as posterior margin, lateral margins parallel. Posterior third of pronotum with a deep depression on either side. Anterior margin of pronotum bearing a row of fine, white bristles. Pronotum with fine microsculpture; anterior half of pronotum bearing the same punctuation as head. Posterior half of pronotum with a fine net of »cells», each of which bears a fine indistinct puncture in the middle. Whole lateral margin of pronotum with a net of very prolonged »cells» as in *A. antinoe* Cobos. Lateral margin of pronotum with sharp, twice indented keel, which is missing in the anterior third.

Scutellum heart-shaped, as long as wide, with fine microsculpture.

Elytra vaulted, twice as long as wide at base, with fine, very short and sparse white pubescence. Lateral margins of elytra slightly sinuate in the middle and slightly serrate in the posterior third. Epipleura not reaching to the apex of elytra. Humeral lobes small and brilliant, the whole elytra (with the exception of humeral lobes) faintly and irregularly punctured, with fine microsculpture. Behind the humeral lobe there is a depression, which continues obliquely to the suture and extends to 1/3 of the elytra. Very faint longitudinal depression also situated in last third of elytra. Elytra marginate laterally, lateral groove enlarged apically. Legs with fine pubescence, femora relatively robust, tibiae slender with a longitudinal keel bearing a row of bristles on the distal half. First tarsal segment the same length as the last; claws simple, slightly enlarged basally. Whole ventral surface of body bronze, deeply punctured, with a fine, white pubescence.

♂: anal segment with straight edge at the apex.

♀: anal segment with triangular notch at the apex.

Length: 4.2 mm (holotype), 5.8 mm (allotype); width: 1.5 mm (holotype), 2.1 mm allotype).

Holotype and allotype: West Aden protectorate (= South Yemen), Lahej, 14—15.7.1963, Linnavuori lgt. Holotype (No 15085) deposited in the Zoological Museum, Helsingfors.

This species is similar to *A. oneli* Obnb. in the shape of the body, but *A. oneli* has pronotum enlarged anteriorly.

Chrysobothris curta Kerremans, 1893

Ethiopia, Mai Chew, 1.6.1963, Linnavuori lgt., 1 ex.

Distribution: East Africa (Tanzania, Zanguebar), Mozambique.

Chrysobothris sudanensis Obenberger, 1940

Ethiopia, Dessie-Karakore, 1.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Sudan, Egypt.

Chrysobothris erythreina Obenberger 1940

Sudan, Erkowit, 18.4.1964, J. Kaisila lgt., 1 ex,. compared with holotype.

Distribution: described from Eritrea.

Parakamosia zoufali Obenberger, 1924

Sudan, Equatoria, Ibba-Yambio, 16.4.1963. Linnavuori lgt., 1 ex.; Equatoria, Opari-Magwe, 13.3.1963, Linnavuori lgt., 1 ex.; compared with holotype.

Distribution: holotype labelled »Africa or.».

Kamosia aethiopica (Kerremans, 1913)

Ethiopia, nr. Harar, 22—23.6.1963, Linnavuori lgt., 1 ex.

Distribution: Zaire.

Kamosia mirabilis Obenberger, 1919

Sudan, Equatoria, Loka Forest, 8—10.4.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: described from Ethiopia.

Kamosia indigacea (Obenberger, 1924)

Ethiopia, Agheresalam, 7.6.1963,Linnavuori lgt., 1 ex., compared with holotype.

Distribution: holotype labelled »Congo Belge».

Kamosia jacobsoni Obenberger, 1935

Sudan, Equatoria, Torit-Kapoeta, 26.3.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: holotype labelled »Africa or.».

Meliboeus neavei Obenberger, 1931

Sudan, Equatoria, Imatong Mts., nr. Gilo, 18—24.3.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Uganda, Natal.

Meliboeus toroensis Obenberger, 1931

Ethiopia, Mt.. Maiqudo, 16—17.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Uganda.

Meliboeus gerardi Obenberger, 1931

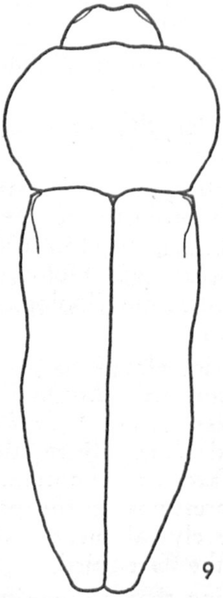
Sudan, Equatoria, Loka Forest, 8—10.4.1963, Linnavuori lgt., 1 ex.; Equatoria, Imatong Mts., nr. Gilo, Linnavuori lgt., 18—24.3.1963, 1 ex.; compared with holotype.

Distribution: holotype labelled »Congo Belge».

Meliboeus theryi Abeille, 1893

Tunisia, Sbiba, 20.8.1962, Linnavuori lgt., 1 ex.

Distribution: Tunisia, Algeria.



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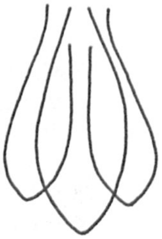

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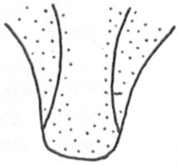

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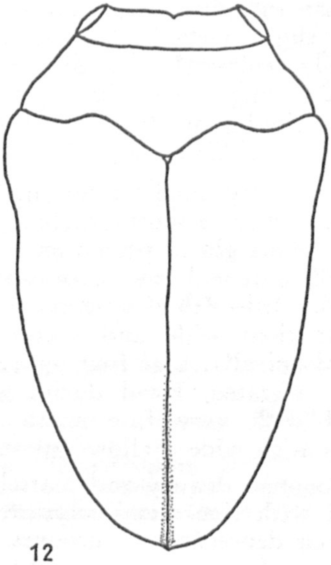

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Figs. 9—11. *Aphanisticus bulbatus* sp. n., 9. dorsal view, 10. aedeagus. — Fig. 11. *Trachys nigra* sp. n., metasternal lobe. — Fig. 12. *Trachys nigra* sp. n., dorsal view.

Pseudagrilodes bolivari Obenberger, 1921

Sudan, Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, Linnavuori lgt., 1 ex.; Equatoria, Ibba-Yambio, 16.4.1963, Linnavuori lgt., 1 ex.; compared with holotype.

Distribution: holotype labelled »Biafra Bay».

Pseudagrilus leonensis Kerremans, 1898

Ethiopia, Belleta Forest, 13—14.6.1963, Linnavuori lgt., 1 ex.

Distribution: Sierra Leone, Ivory Coast, Cameroon, Chad, Gabon, Zaire.

Pseudagrilus sophorae (Fabricius, 1792)

Ethiopia, Shashamanni, 6—7.6.1963, Linnavuori lgt., 1 ex.; Belleta Forest, 13—14.6.1963, Linnavuori lgt., 1 ex.

Distribution: Sierra Leone, Guinea, Ivory Coast, Dahomey, Fernando Poo, Gabon, Chad, Zaire, Uganda, Kenya.

Aphanisticus aegyptiacus Théry, 1928

Sudan, Atbara, 19.10.1962, S. Panelius lgt., 2 exx.; Khor Musa Pasha, Wadi Halfa distr., 7.4.1964, M. Meinander lgt., 1 ex.

Distribution: described from Egypt.

Aphanisticus delicatulus Fåhraeus, 1851

Sudan, Equatoria, Lotti Forest, 14—17.3.1963, Linnavuori lgt., 3 exx.

Distribution: described from Natal.

Aphanisticus nepos Obenberger, 1928

Sudan, Equatoria, Imatong, Mts., Kateri-Gilo, 18—24.3.1963, Linnavuori lgt., 3 exx., compared with holotype.

Distribution: holotype labelled »Congo Belge».

Aphanisticus marseuli Tournier, 1868

Sudan, Bahr el Ghazal, R.Na'am, nr. Mwolo, 23.2.1963, Linnavuori lgt., 1 ex.

Distribution: Egypt.

Aphanisticus bulbatus sp.n.

Body entirely hairless, greenish black with slight metallic lustre. Pronotum notably enlarged, round; elytra 2.4 times as long as wide basally. The species is similar to *A. gedyei* Théry and *A. convexicollis* Obnb.

Head very small. Eyes small, reniform. Antennae short, reaching only to anterior margin of pronotum. First and second antennal segments small and round, 3rd—7th segments somewhat longer than wide and somewhat enlarged apically. Last four antennal segments serrated. Head distinctly punctured with very fine microsculpture. Frons with wide shallow groove.

Pronotum densely and coarsely punctured with fine microsculpture, round, without depressions or grooves. Lateral margins of pronotum regularly arcuate, pronotum 1.3 times as wide as base of elytra. Anterior margin of pronotum twice slightly sinuate, posterior margin twice sinuate. Sides of pronotum wholly marginate. Femora very stout; tibiae arcuated at the base, with a row of 8—10 bristles on the distal half of the outer margin. Last tarsal segment as long as the other segments together. Claws simple.

Elytra 2.3 times as long as wide at base, with distinct humeral lobes. Lateral margins of the elytra distinctly sinuate in the first third. Elytra separately arcuated on the apex and very slightly sinuate before apex. Elytra bearing indistinct longitudinal grooves composed of coarse punctures; these punctures transversally united in the basal third of the elytra. Elytral suture very slightly elevated in the apical third. Epipleura of elytra reaching to the notch in the elytra before the apex. Anal segment slightly sinuate (♂) or arcuate (♀) in the middle of the serrated posterior margin.

Aedeagus wide, slightly sclerotized, lancet-shaped; parameres large, almost as wide as aedeagus.

Length: 3.6 mm; width 1.0 mm (holotype).

Variability: length 3.5—4.3 mm; width 1.0—1.4 mm.

Holotype, allotype and paratypes (5): West Aden protectorate (= South Yemen), nr. Lahej, 9—15.7.1963, ad lucem, Linnavuori lgt. Holotype No 15086) deposited in the Zoological Museum, Helsingfors.

A. bulbatus is related to *A. gedyei* Théry and *A. convexicollis* Obnb. These two species differ from *A. bulbatus* in the shorter and wider elytra, the narrower and less arcuate pronotum, which bears deep depressions in the posterior angles, and the elytral suture, which is elevated from the first third.

It is interesting that all specimens of *A. bulbatus* were caught with a light trap.

Paracylindromorphus rivularis Obenberger, 1924

Ethiopia, Belleta Forest, 13—14.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: the holotype is labelled »Congo Belge».

Paracylindromorphus capitatus lembanus Obenberger, 1928

Sudan, Equatoria, Yambio, 18—25.4.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Zaire, Uganda, S. Sudan.

Agrilus calvulus Obenberger, 1935

Sudan, Equatoria, Kapoeta-Boma, 26—27.3. 1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: described from Mombasa.

Agrilus cuspidatus Fåhraeus, 1851

Eritrea, Decamere, 25—26.5.1963, Linnavuori lgt., 1 ex.

Distribution: Cape Province, Transvaal, Natal.

Agrilus bayoni Kerremans, 1910

Ethiopia, Belleta Forest, 13—14.6.1963, Linnavuori lgt., 1 ex.

Sudan, Blue Nile, Umm Banein, 14.11.1962, Linnavuori lgt., 1 ex.; Blue Nile, Singa-Damazin, 15—17.11.1962, Linnavuori lgt., 1 ex.

Distribution: Kenya, Uganda.

Agrilus prosternidens Obenberger, 1935

Sudan, Equatoria, Lotti Forest, 14—17.3.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: Kenya, Uganda.

Agrilus roscidus Kiesenwetter, 1857

Tunisia, Ain Dahram, 16—18.8.1962, Linnavuori lgt., 1 ex.

Distribution: Central and Southern Europe, North Africa, Asia Minor, Syria, Caucasus.

Agrilus cervicornis Abeille, 1897

Tunisia, Ain Dahram, 16—18.8.1962, Linnavuori lgt., 1 ex.

Distribution: Algeria, Tunisia.

Agrilus sp. 1, near *hyperici* Creutz.

Ethiopia, Belleta Forest, 13—14.6.1963, Linnavuori lgt., 1 ex.

Agrilus sp. 2, near *prosternidens* Obnb.

Ethiopia, Belleta Forest, 13—14.6.1963, Linnavuori lgt., 3 exx.

Trachys comitessa Kerremans, 1913

Sudan, Equatoria, Imatong Mts., nr. Gilo, 18—24.3.1963, Linnavuori lgt., 2 exx.

Distribution: described from Kilimanjaro.

Trachys dabraxa Obenberger, 1937

Somalia, Hargeisa-Berbera, 25—27.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: holotype is labelled »Congo Belge».

Trachys fenestrella Obenberger, 1937

Sudan, Equatoria, Yambio, 18—25.4.1963, Linnavuori, lgt., 1 ex., compared with holotype.

Distribution: holotype is labelled »Congo Belge».

Trachys tschoffeni Kerremans, 1896

Sudan, Bahr el Ghazal, Rumbek-M'Boloko, 22.2.1963, Linnavuori lgt., 1 ex.; Equatoria, Yambio, 18—25.4.1963, Linnavuori lgt., 1 ex.

Ethiopia, Alamata, 1.6.1963, Linnavuori lgt., 1 ex.

Distribution: Zaire, Kenya.

Trachys blandula Obenberger, 1937

Ethiopia, Shashamanni, 6—7.6.1963, Linnavuori lgt., 1 ex., compared with holotype.

Distribution: holotype is labelled »Haute Uéllé», S. Sudan.

Trachys theocharea Obenberger, 1937

Sudan, Equatoria, Yambio, 18—25.4.1963, Linnavuori lgt., 1 ex.

Somalia, Jiggiga-Hargeisa, 23.6.1963, Linnavuori lgt., 1 ex.; compared with holotype.

Distribution: Rhodesia, Kenya.

Trachys nigra sp.n.

Body hairless, black; only the tarsi brown on the ventral surface. Prolonged and relatively little vaulted species.

Head very wide, slightly punctured, with a narrow and deep median groove; this groove is bifurcated at the anterior end and each arm leads into a deep depression at the inner margin of the eye. The inner margin of each eye forms a sharp keel: eyes oval. Clypeus slightly incurved on the anterior margin. First and second antennal segments almost round, last five antennal segments enlarged on the outer margin.

Pronotum short, wide, 3.2 times as wide as long, slightly sinuate on the anterior margin. Posterior margin of pronotum twice deeply sinuate, lobate in the middle. The lateral margins of pronotum slightly sinuate. Whole pronotum slightly punctured. Processus prosternalis faintly punctured with two curved grooves. Legs relatively long, tibiae straight with a row of delicate bristles on the inner margin.

Elytra 1.5 times as long as wide at base, somewhat wider than base of pronotum. Humeral lobes large; whole elytra densely, faintly and irregularly punctured, hairless. Elytral suture slightly elevated in the posterior half. Lateral margins of elytra slightly hollowed, epipleura reaching to the apex of elytra.

Whole ventral surface of body black with a slight metallic lustre; anal sternite arcuate and margined on the apex.

Length: 3.0 mm; width: 1.4 mm.

Holotype: ♀, Sudan, Equatoria, Imatong Mts., nr. Gilo, 18—24.3.1963, Linnavuori lgt. Holotype (No 15090) deposited in the Zoological Museum, Helsingfors.

Habroloma triangularis Lacordaire, 1835

Tunisia, Siliana, 20.8.1962, Linnavuori lgt., 1 ex.

Distribution: Morocco, Algeria, Tunisia, Spain, France, Italy, Sardinia, Sicily.

Literature

Descarpentries, A. & Mateu, J. 1965: Coléopteres Buprestidae récoltés dans l'Ennedi par M. J. Mateu. — Bull. I.F.A.N. 27:1022—1056.

Lewis, J. G.E. 1964: Protective devices in two species of African Coleoptera. — Proc. R. Entomol. Soc. London (A) 39:50—52.

Théry, A. 1930: Études sur les Buprestidae de l'Afrique du Nord. — Mém. Soc. Sci. Nat. Maroc 19:1—586.

Litteratur

Palm, Thure 1972, Svensk Insektfauna 9. Skalbaggar Coleoptera Kortvingar: Fam. Staphylinidae 7: underfam. Aleocharinae (Aleuonota-Tinotus). (rekv.nr 53) Stockholm. 170 sidor + 7 planscher. Pris kr 50,—.

Den sista och avslutande delen av fil. doktor Thure Palms bearbetning av familjen Staphylinidae i Fennoskandien och Danmark har utkommit. Med detta arbete har Thure Palm åstadkommit ett utomordentligt för hela entomologin ytterst värdefullt verk. Arbetet är påbörjat år 1948 och består av sju delar på sammanlagt nästan ettusen sidor. I sin bearbetning har han tillämpat de senaste undersökningsresultaten av arternas inbördes släktskap, vilket man speciellt observerar t.ex. när man går igenom hans uppställning av släktet *Atheta.*

Den sjunde delen liksom alla tidigare delar av hans staphylinid-arbete är utförd med stor omsorg. Som vanligt har han i den noggranna uppgifter om de olika arternas förekomst och levnadsvanor och den är även illustrerad med talrika av honom själv utförda detaljteckningar. Över de flesta släkten finns goda habitusbilder, vilka är tagna från Victor Hansens arbeten. Detta sjunde häfte omfattar sammanlagt ca 160 artbeskrivningar och då författaren medtagit hela Nordens kortvingar, kan det nämnas att av dessa 160 arter ett trettiotal ej ännu hittats i Sverige.

Alla koleopterologer kan vara tacksamma över att dr Palm har berikat den entomologiska litteraturen med detta moderna och gedigna verk, som omfattar och beskriver alla de i Fennoskandien och Danmark förekommande staphyliniderna.

Sten Stockmann

Notulae Entomologicae LIII: 23—25, 1973

Notes on some types of Enderlein's species of Coniopterygidae, with description of a new species of Pampoconis (Neuroptera)

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Abstract

The types of *Helicoconis australiensis, H. maculata, H. garleppi, H. pistrix* and *Coniopteryx biroi,* all described by ENDERLEIN in 1906, have been found and are discussed. *Pampoconis dentifera* sp.n. from Chile is described.

During my work with the revision of the Coniopterygidae (MEINANDER 1972) I tried to trace the types of all the species, but failed with some of Enderlein's species, among others. After the publication of the revision, Mrs H. Wendt of the Zoological Museum of the Humboldt University in Berlin, D.D.R. managed to find five of Enderlein's types, which are listed below. These finds did not necessitate any taxonomical changes, but undetermined material from Enderlein's collection included with them was found to contain a new species of *Pampoconis* from Chile, which I take this opportunity to describe.

In this connection, I want to thank Mrs. Wendt in Berlin for kindly sending me the material and Professor Phillip A. Adams in Fullerton, Cal., for sending me a copy of his manuscript with descriptions of two new species of *Pampoconis,* which made a comparison with my new species possible.

Cryptoscenea australiensis (Enderlein, 1906)

Helicoconis australiensis ENDERLEIN, 1906: 232, f. 31 (Type: ♀ holotype; Australia, New South Wales, Sidney, 1900-11-03, Biró; HMB.)

One pair of wings and one antenna mounted on a slide are apparently all that is left of the type. Its identification is impossible, since this would require an investigation of the male genitalia, but nothing was found to indicate that the species redescribed by KIMMINS & WISE (1962) is not conspecific with the type.

Spiloconis maculata Enderlein, 1906)

Helicoconis maculata ENDERLEIN, 1906:232, f. 30. (Type: ♀ holotype; Australia, New South Wales, Springwood, 1900-11-19, Biró; HMB.)

One pair of wings, one hind leg and one antenna mounted on a slide are apparently all that is left of the type. The species was redescribed by TJEDER (1968) and so far no other species is known with which it could be confused.

Neconis garleppi (Enderlein, 1906)

Helicoconis garleppi ENDERLEIN, 1906:234, f. 32. (Type: ♀ holotype; Peru, Cuzco, Callanga 1903-03-11, Garlepp; HMB.)

The type specimen is mounted on three slides and all the parts are preserved. An investigation did not reveal anything particularly interesting to add to Enderlein's original description. As the female genitalia of the species of the tribe Fontenelleini are very similar and not even characteristic of the genera, their investigation would probably not be particularly rewarding, at least not before more material from Peru is available.

Neoconis pistrix (Enderlein, 1906)

Helicoconis pistrix Enderlein, 1906:233, f. 33. (Type: ♀ holotype; Peru, Cuzco, Callanga, Garleppi; HMB.)

The type specimen is mounted on three slides and all the parts are preserved. There is little to add to Enderlein's original description. The antennae, which Enderlein reports to be 1.2 mm, are apparently longer in living specimens; the mounted antenna is very shrunken. The female genitalia did not reveal any special character, being of the same type as those of *N. garleppi*.

Pampoconis dentifera Meinander, sp. n.

Head capsule and palpi dark brown. Eyes blackish and small, height 0.26

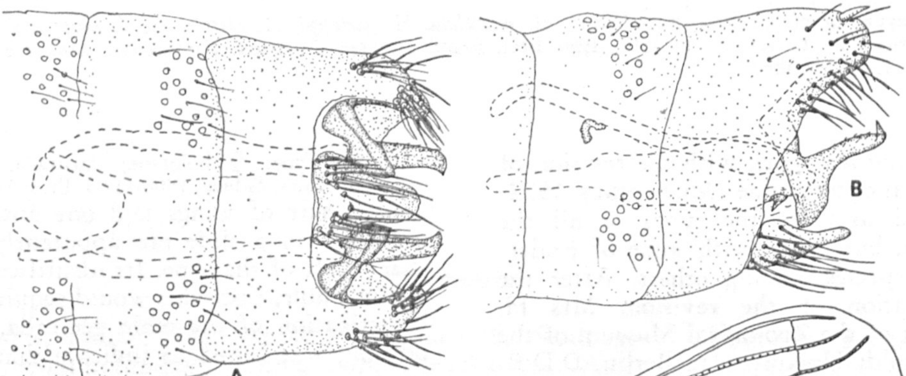

Fig. 1. Male of *Pampoconis dentifera*. A. terminal abdominal segments, ventral view, B. ditto lateral view, C. ditto caudal view, D. wings, E. paramere and penis, lateral view, F. penis dorsal view.

mm. Antennae 26-segmented, proximally yellowish brown, distally brown. Scape about as long as broad, pedicel and flagellar segments about one and a half times as long as broad. Length of antennae about 1.9 mm.

Thorax blackish brown without distinct shoulder spots.

Wings, Fig. 1D. Membrane of both wings hyaline. Venation almost similar to that of the type species, *P. latipennis,* but both wings with only one basal cross-vein in the costal area, R_1 distally curving cephalad and Cu_2 of fore wing not sinuous. Length of fore wing 4.5 mm, of hind wing 3.9 mm.

Male genitalia, Figs. 1A—C, E—F. Dorsally apically on ectoprocts a short and prominent spine. All parts of the ring formed by the ninth segment and ectoprocts about equally sclerotized. A distinct well-sclerotized ligulate hypandrium bearing long setae present. Penis with a pair of strongly sclerotized anterior rods, which anterior to the middle of the sclerotized area are fused to form a ring-like structure; posterior to the structure are two oblique plates, which apically ventrally have a longitudinal row of short thick dentiform structures. Parameres long and slender, apically fused with the styli, which are rather narrow and apically have an upwardsdirected claw. From the styli a rather long apophysis extends dorsad. The styli apparently not articulating with the ectoprocts.

Female unknown. Biology unknown.

Distribution: Central Chile.

Specimen examined: Chile, Comudes, 1901-10-20, ♂ holotype, Schönemann, HMB.

Three species of *Pampoconis* are hitherto known, the type species *P. latipennis* Meinander, 1972, and two species which will be described by ADAMS, *P. punctipennis* Adams in litt. and *P. uncinata* Adams in litt. *P. punctipennis* is easily separated from the other species by its spotted wings. The male genitalia also differ considerably; the shape of the penis and the styli is particularly divergent and the ectoprocts each bear 5—6 stout spines, while the other species have only one spine on each ectoproct. In both *P. punctipennis* and *P. dentifera* there is posteriorly of the ninth segment a ventral setose ligulate sclerite, which should obviously be regareded as the hypandrium, while in *P. latipennis* and *P. uncinata* there is no distinct hypandrium. The posterior plates of the penis of both *P. uncinata* and *P. dentifera* have dentiform structures, in *P. dentifera* only in one row but in *P. uncinata* in several longitudinal rows. In all species except *P. latipennis* R_1 of the forewing curves cephalad in all specimens so far investigated. All four known species of *Pampoconis* are recorded from southern parts of South America.

Coniopteryx biroi (Enderlein, 1906)

Coniopteryx biroi ENDERLEIN, 1906:203, f. 4. (Type: ♀ holotype; New Kuinea, Lemien am Berlinerhafen, 1896, Biró; HMB.)

One pair of wings and one antenna mounted on a slide are apparently all that is left of the type. The species remains unsolved.

References

ADAMS, P. A. 1973 in litt: Coniopterygidae from Chile with three new species (Neuroptera.) — Pan-Pacific Entomol.

ENDERLEIN, G. 1906: Monographie der Coniopterygyiden. — Zool. Jahrb. (Abt. Syst.) 23:173—242.

KIMMINS, D. E. & WISE, K. A. J. 1962: A record of Cryptoscenea australiensis (Enderlein) (Neuroptera: Coniopterygidae) in New Zealand, with a redescription of the species. — Trans. R. Soc. New Zealand 2:35—39.

MEINANDER, M. 1972: A revision of the family Coniopterygidae (Planipennia). — Acta Zool. Fennica 136:1—357.

TJEDER, B. 1968: Coniopteryx cerata Hagen, 1858, further description and lectotype designation (Neuroptera, Coniopterygidae). — Entomol. Tidskr. 89:141—146.

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Pronototropis Reuter, 1879 und Pleuroxonotus Reuter, 1904 (Heteroptera, Miridae)

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Abstract

A critical review of the characters separating the two genera shows that they are very closely related and that it may be justified to unite them, but is proposed that the genera are kept separate until males of *Pleuroxonotus* are available. The characters separating the genera are pointed out. *Pleuroxonotus* is monotypic with *P. nasutus* Reuter, *Pronototropis* is divided into two subgenera, *Pronototropis* (s.str.) with *P. punctipennis* (Fieber) *and P. longicornis* Reuter and *Jafara* E. Wagner with *P. brevirostris* E. Wagner.

Zu diesen beiden Gattungen gehören 4 Arten: *Pleuroxonotus nasutus* Reut., *Pronototropis punctipennis* Fieb., *Pronototropis longicornis* Reut. und *Pronototropis brevirostris* E. Wgn.

Beide Gattungen stehen einander sehr nahe. Sie werden verbunden durch den kurzen Längskiel zwischen den Schwielen des Pronotum (Fig. 1, a, e, i, n), die punktierten Halbdecken, das kurze Rostrum und den vorgestreckten Kopf (Fig. 1, c, g, 1, p), dessen Kehle waagerecht ist. Mit Ausnahme von *Pronototropis brevirostris* E. Wagn. stimmen die Arten auch im Bau der Klauen (Fig. 2, a—d) weitgehend überein, wobei der Verfasser bereits (1971) darauf hingewiesen hat, dass der abweichende Bau der Klauen dieser Art als Anpassung an die Lebensweise angesehen werden muss. *P. brevirostris* E. Wagn. lebt an *Hymenocrater incanus* Bunge, einer stark filzig klebrigen Pflanze. Ohne Zweifel lässt sich der Bau der Klauen dieser Art als eine Fortentwicklung der Klauen der anderen 3 Arten auffassen. Der Seitenrand des Pronotum ist bei 3 der Arten blattartig ausgebreitet (Fig. 1, a, e, i). Auch hierin weicht *P. brevirostris* E. Wagn. ab, denn bei dieser Art fehlt dieser blattartige Seitenrand. Daher hat der Verfasser (1971) für diese Art die Untergattung *Jafara aufgestellt.* Da bei *Pleuroxonotus* Reut. bisher nur das ♀ vorliegt, lässt sich der Bau der Genitalien des ♂ nicht in die Betrachtung einbeziehen. Das erschwert die Betrachtung erheblich.

Linnavuori (1971) versucht, diese systematische Ordnung zu ändern, indem er *Pronototropis longicornis* Reut. in die Gattung *Pleuroxonotus* Reut. versetzt und nur *Pronototropis punctipennis* Fieb. in der bisherigen Gattung belässt. *Pronototropis brevirostris* E. Wgn. war ihm nicht bekannt und wurde daher nicht erwähnt. Dieser neuen Anordnung muss jedoch widersprochen werden. Für die Unterscheidung der beiden Gattungen führt Linnavuori 9 Merkmale an. Sie sollen hier kritisch betrachtet werden.

1. Die Körperform. Sie soll bei *Pronototropis* Reut. kürzer und breiter sein als bei *Pleuroxonotus* Reut. Dieser Unterschied ist zwar vorhanden,

aber nur in geringem Masse und kann keinesfalls als generisches Merkmal gewertet werden.

2. Färbungsmerkmale: Hier soll *Pronototropis* Reut. ausgedehntere Schwarzfärbung an Kopf, Fühlern und Pronotum aufweisen und ausserdem feine, schwarze Punkte an den Schienen haben, während bei *Pleuroxonotus* Reut. diese schwarze Zeichnung fehlen soll. Auch das stimmt zwar, ist aber gleichfalls kein generisches Merkmal. In zahlreichen Gattungen gibt es neben dunkel gefärbten Arten auch einfarbig helle, ohne dass jemand auf den Gedanken käme, nach diesem Merkmal die Gattung in 2 Gattungen zu teilen.

3. Die Behaarung. Alle 4 Arten tragen kurze, borstenartige Haare, die in der Regel in dunklen Punkten stehen. Sie sind bei *P. punctipennis* Fieb. etwas länger und stehen dichter als bei den 3 anderen Arten. Dies ist ein Unterschied, der jedoch auf keinen Falls als generisches Merkmal gewertet werden kann. Auch an den Beinen ist das der Fall. Die dunklen Punkte an den Schienen von *Pronotropis punctipennis* Fieb. Finden sich teils an der Basis von Dornen, teils aber auch an der Basis von Haaren, wie es auch auf der Oberseite der Fall ist. Von diesen Punkten könnten diejenigen an der Basis der Dornen als generisches Merkmal gewertet werden. Aber eine Nachprüfung ergab, dass auch bei *P. longicornis* Reut. sich an der Basis der Dornen schwach erkennbare Höfe zeigen.

4. Die Kopfform. Hier sieht LINNAVUORI einen Unterschied in der längeren Kopfform bei *Pleuroxonotus nasutus* Reut. und *Pronototropis longi*cornis Reut. (Fig. 1, c+g) gegenüber der kürzeren Kopfform bei *Pronototropis punctipennis* Fieb. (Fig. 1p) Hier ist in der Tat ein Unterschied vorhanden. Die Behauptung LINNAVUORIS indessen, dass bei *P. punctipennis* Fieb. (Fig. 1p) der tylus »vertical», bei *P. nasutus* Reut. und *P. longicornis* Reut. dagegen »less suddenly declivous» sei (Fig. 1, c+g), kann der Verfasser nicht bestätigen. Er steht vielmehr bei den beiden letztgenannten Arten stärker vor. Betrachten wir jedoch die Köpfe aller 4 Arten (Fig. 1, c, g, 1, p) seitlich, so zeigen sie eine grosse Übereinstimmung und *P. brevirostris* E. Wgn. bildet sogar eine Übergangsform zwischen den beiden Gruppen. Daher erscheint auch nach diesem Merkmal eine Trennung in zwei Gattungen nicht gerechtfertigt.

Es sei hier jedoch auf zwei ebenso gewichtige Merkmale hingewiesen, die für eine Beibehaltung der bisherigen Anordnung sprechen. Erstens liegt die Fühlergrube bei *P. nasutus* Reut. (Fig. 1c) weiter vom Auge entfernt auf einem kräftigen Höcker und bei Betrachtung von vorn ziemlich weit unter der unteren Augenecke (Fig. 1b). Bei den anderen 3 Arten (Fig. 1, g, 1, p) liegt sie nahe dem Augenrande und bei Betrachtung von vorn (Fig. 1, f, k, o) unmittelbar neben der unteren Augenecke. Zweitens erreicht das 1. Glied des Rostrum bei *P. nasutus* Reut. (Fig. 1c) nur etwa die Mitte des Auges, bei *P. brevirostris* E. Wgn. und *P. punctipennis* Fieb. dagegen erreicht es den Hinterrand des Kopfes (Fig. 1, 1+p), bei *P. longicornis* Reut. ist es zwar etwas kürzer (Fig. 1g), erreicht aber den Hinterrand des Auges. Die Oberlippe ist bei *P. nasutus* Reut. (Fig. 1c) kurz und dick und reicht kaum bis zur Fühlerwurzel, bei den anderen 3 Arten ist sie lang und schlank (Fig. 1, g, 1, p) und reicht mindestent bis zur Höhe des Auges. In diesen Merkmalen nimmt also *P. nasutus* Reut. eine isolierte Stellung ein.

5. Die Fühler. Sie unterscheiden sich zwar bei den 4 Arten durch Länge und Dicke (Fig. 1, d, h, m, q), aber die Unterschiede sind gering und gehen in einander über. Am schlanksten sind sie bei *P. longicornis* Reut., am dicksten bei *P. punctipennis Fieb.*, *P. nasutus* Reut.

nimmt eine Mittelstellung ein. Auch der Vergleich des 2. Gliedes mit der Diatone zeigt doch wirklich keine wesentlichen Unterschiede, inbesondere keine solchen, die als Gattungsmerkmale gewertet werden könnten. Ausserdem ist die Breite des Kopfes ganz ähnlichen Schwankungen zwischen den Arten unterworfen wie die Länge der Fühlerglieder.

6. Das Rostrum. Alle 4 Arten haben ein verhältnismässig kurzes Rostrum. Die grösste Länge erreicht es bei *P. longicornis* Reut., wo es die Basis der Mittelhüften etwas überragt; das kürzeste Rostrum findet sich bei *P. punctipennis* Fieb., wo es nur wenig über die Vorderhüften hinausragt. Die beiden anderen Arten nehmen Zwischenstellungen ein. Daher reichen auch hier die Unterschiede für eine Trennung in zwei Gattungen nicht aus. Über das 1. Glied des Rostrum wurde bereits bei der Gestalt des Kopfes gesprochen und festgestellt, das seine Länge eher für die Aufrechterhaltung der bisherigen Ordnung sprechen würde.

7. Das Pronotum. Hier sollen nach LINNAVUORI die beiden Gattungen, wie er sie einteilen möchte, sich durch 2 Merkmale unterscheiden. Das erste ist die Form der Pronotumseiten (Fig. 1, a, e, i, n). Sie sollen bei *Pleuroxonotus* Reut. fast gerade, bei *Pronototropis* Reut. aber eingebuchtet sein. Fast gerade Pronotumseiten hat jedoch nur eine Art, *P. longicornis* Reut. (Fig. 1e). Bei den übrigen Arten (Fig. 1, a, i, n) sind sie mehr oder weniger stark eingebuchtet. *P. nasutus* Reut., mit dem LINNAVUORI *P. longicornis* Reut. vereinigen möchte, hat sogar recht deutlich eingebuchtete Pronotumseiten. Dies Merkmal spricht also eher gegen LINNVAUORIS Absicht.

Das zweite Merkmal ist die Ausbildung des Seitenrandes des Pronotum Er ist bei *Pleuroxonotus* Reut. breit blattartig, aussen nach oben aufgebogen und scharf. Dies Merkmal betrachtet REUTER (1904) als das wichtigste zur Unterscheidung seiner Gattung von allen übrigen. LINNAVUORI stellt demgegenüber fest, dass auch bei *P. longicornis* Reut. und *P. punctipennis* Fieb. ein solcher Rand vorhanden sei, der beim ♀ der erstgenannten Art sogar fast so breit ist wie bei *Pleuroxonotus nasutus* Reut. Das stimmt zwar, aber der Rand ist bei *P. longicornis* Reut. nicht aufgebogen und nicht scharf sondern stumpf. Bei *P. punctipennis* Fieb. ist der Rand schmaler unnd bei *P. brevirostris* E. Wgn. fehlt er. Daher bleibt auch hier *P. nasutus* Reut. isoliert. Die scheinbare Übereinstimmung der ♀♀ von *Pleuroxonotus nasutus* Reut. und *Pronototropis longicornis* Reut. ist daher keine wirkliche und kann noch weniger als die übrigen Merkmale LINNAVUORIS Ansicht stützen.

8. Die Beine. In der Länge der Beine unterscheiden sich die Arten geringfügig. Die längsten, schlanksten Beine finden sich bei *P. longicornis* Reut., die kürzesten, kräftigsten bei *P. punctipennis* Fieb. Die Längenverhältnisse der Glieder der hinteren Tarsen ist ein Merkmal, das grosses Gewicht besitzt und oft als generisches Merkmal verwandt wird. Leider liessen sie sich bei der Type von *P. nasutus* Reut. nicht mehr einwandfrei ermitteln. Da aber REUTER (1904) angibt, das 3. Glied sei bei *P. nasutus* Reut. etwas länger als das 2. und der Verfasser der Ansicht ist, dass wir uns hier auf Reuter verlassen können, ist hier sogar ein sehr gewichtiger Unterschied zwischen *P. nasutus* Reut. und *P. longicornis* Reut. vorhanden, der gegen eine Vereinigung dieser beiden Arten spricht; denn bei letzterer Art (Fig. 2e) ist das 3. Glied deutlich kürzer als das 2., andererseits stimmen in diesem Merkmal ausgerechnet *P. nasutus* Reut. und *P. punctipennis* Fieb. (Fig. 2f) überein. *P. brevirostris* E. Wgn. (Fig. 2g) passt in diesem Merkmal zu *P. longicornis* Reut., was übrigens auch für den Bau der Genitalien zutrifft.

9. Der Bau der Genitalien

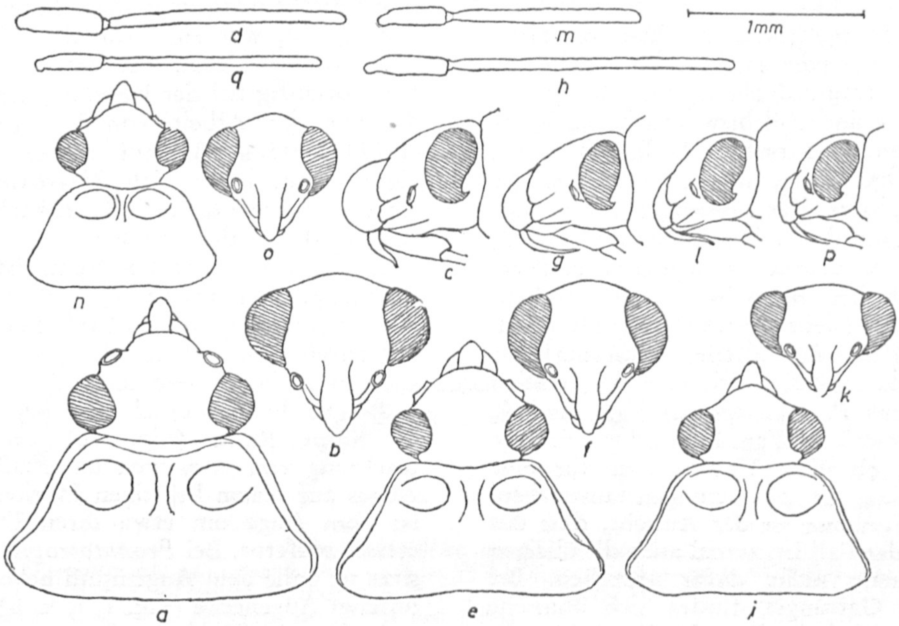

Abb. 1. Kopf und Pronotum.
a—b = *Pleuroxonotus nasutus* Reut., ♀, e—h = *Pronototropis longicornis* Reut., ♀, i—m = *Pronototropis punctipennis* Fieb., ♂, n—q = *Pronototropis (Jafara) brevirostris* E. Wgn., ♀ — a, e, i, n = Kopf und PPronotum von oben, b, f, k, o = Kopf von vorn, c, g, l, p = Kopf von links, d, h, m, q = 1. und 2. Fühlerglied.

des Männchens. Ohne Zweifel kommt auch diesem Merkmal sehr starkes Gewicht zu. Vor allem hat es mehr Gewicht als die unter Nr. 1—7 angeführten Merkmale. Es kann uns aber hier nicht weiterhelfen, da bei *Pleuroxonotus nasutus* Reut. bisher nur ♀♀ vorliegen. Da aber gerade über die Zusammengehörigkeit von *Pleuroxonotus* Reut. mit einer Art von *Pronototropis* Reut. ent*schieden* werden soll, wäre es sinnvoll, mit einer Entscheidung zu warten, bis auch das ♂ ersterer Gattung vorliegt. Vor allem erscheint das erforderlich, weil die angeführten Unterschiede keinen Beweis liefern. Auf keinen Fall aber ist es zulässig, über die Genitalien von des ♂ von *Pleuroxonotus* Reut. etwas auszusagen, wie LINNAVUORI es tut, wenn die Genitalien des Typus generis unbekannt sind und die Beschreibung dieser Genitalien auf eine Art zu gründen, deren Zugehörigkeit zu *Pleuroxonotus* Reut. erst bewiesen werden soll.

Die Genitalien des ♂ der 3 *Pronototropis*-Arten lassen zwei verschiedene Bautypen erkennen. Bei *P. punctipennis* Fieb., dem Typus generis (Fig. 3, a—d) ist die Vesika kurz, kräftig und im Apikalteil stärker gebogen. Distal befindet sich ein membranöser Sack, der bis zur Spitze reicht und den Chitinstab ein wenig überragt. Die Vesika ist daher distal stumpf. Das rechte Paramer (Fig. 3a) ist distal zweispitzig, fast stempelförmig. Am linken Paramer (Fig. 3b) ist der Sinneshöcker in einen spitzen Fortsatz verlängert. Dieser Bau der Genitalien findet sich nur bei *P. punctipennis* Fieb. Bei den beiden anderen Arten (Fig.

3, e—h und i—m) ist die Vesika schlank und S-förmig gekrümmt. Der Apikalteil wird von 1 oder 2 schlanken Chitinspitzen überragt, deren Spitzen leicht gekrümmt sind und bisweilen hornatig erscheinen. Das rechte Paramer (Fig. 3, e+i) hat distal nur eine Spitze, die Hypophysis. Der Fortsatz auf dem Sinneshöcker des linken Paramers (Fig. 3, f+k) ist deutlicher abgesetzt und erscheint bei Betrachtung aus anderer Richtung (siehe LINNAVUORI!) als Zahn. Im Bau des Apikalteiles der Theka (Fig. 3, d, h, m) zeigt sich eine Ähnlichkeit zwischen *P. punctipennis* Fieb. und *P. brevirostris* E. Wgn. Hier erhebt sich die Frage, ob diese Unterschiede für eine Trennung in 2 Gattungen ausreichen. Der Verfasser ist der Ansicht, dass das nicht der Fall ist, zumal auch die übrigen Merkmale nicht dafür sprechen. Bei vielen Gattungen finden sich ähnliche Unterschiede im Bau der Genitalien des ♂. Zudem liesse sich die Form der Vesika bei *P. punctipennis* Fieb. als Rückbildung derjenigen der beiden anderen Arten erklären.

Das Ergebnis dieser Betrachtungen ist also: Die Gattung *Pronototropis* Reut. lässt sich nicht in zwei Gattungen teilen. Wie aber verhalten sich *Pleuroxonotus* und *Pronototropis* zueinander? Wie bereits weiter oben ausgeführt wurde, sollte eine Entscheidung über diese Frage erst dann gefällt werden, wenn das ♂ von *Pleuroxonotus* Reut. vorliegt. Es muss also vorlaufig bei der Regelung bleiben, die vor der Arbeit von LINNAVUORI (1971) bestand. Bis zur Entscheidung dieser Frage lassen sich *Pleuroxonotus* Reut. und *Pronototropis* Reut. nach folgenden Merkmalen trennen.

1. Bei *Pleuroxonotus* Reut. ist der blattartige Seitenrand des Pronotum stark aufgebogen und scharf. Bei *Pronototropis* Reut. ist derselbe nicht oder kaum aufgebogen und dick.

2. Die Fühlerwurzel sitzt bei *Pleuroxonotus* Reut. (Fig. 1b) bei Betrachtung von vorn weit unterhalb des Auges auf einem kräftigen Höcker. Sie ist vom Auge um etwa ihren Durchmesser entfernt. Bei *Pronototropis* Reut. sitzt sie nahe dem Augenrand neben der unteren Augenecke (Fig. 1, f, k, n).

3. Das 1. Glied des Rostrum reicht bei *Pleuroxonotus* Reut. (Fig. 1c) nur bis zur Mitte des Auges, bei *Pronototropis* Reut. erreicht es den Hinterrand des Kopfes, mindestens aber den Hinterrand des Auges (Fig. 1, g, l, p). Die Oberlippe ist bei *Pleuroxonotus* Reut. weit kürzer und dicker.

4. Das Haftläppchen der Klauen ist bei *Pleroxonotus* Reut. (Fig. 2a) länger als seine Entfernung von der Klauen-

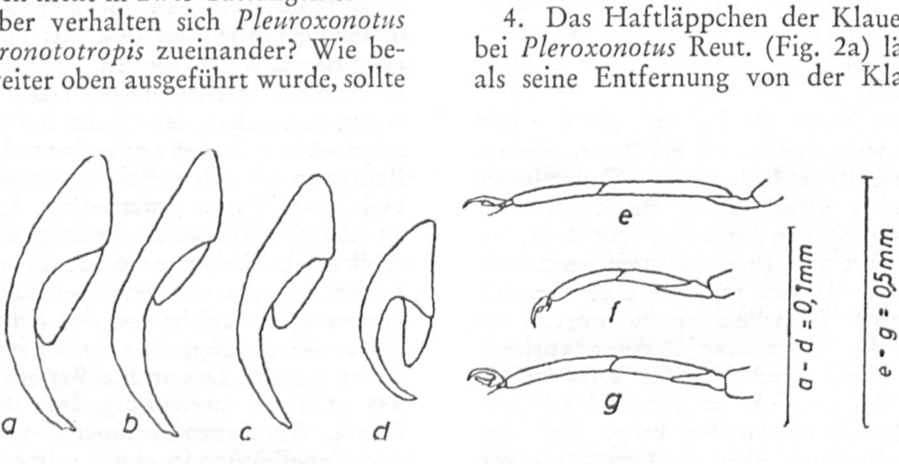

Abb. 2. Tarsen und Klauen.
a = *Pleuroxonotus nasutus* Reut., ♀ b+e = *Pronototropis longicornis* Reut., ♀ c+f = *Pronototropis punctipennis* Fieb., ♂ d+g = *Pronototropis (Jafara) brevirostris* E. Wgn., ♀ — a—d = Klaue des Hinterfusses von aussen, e—g = Hinterfruss seitlich.

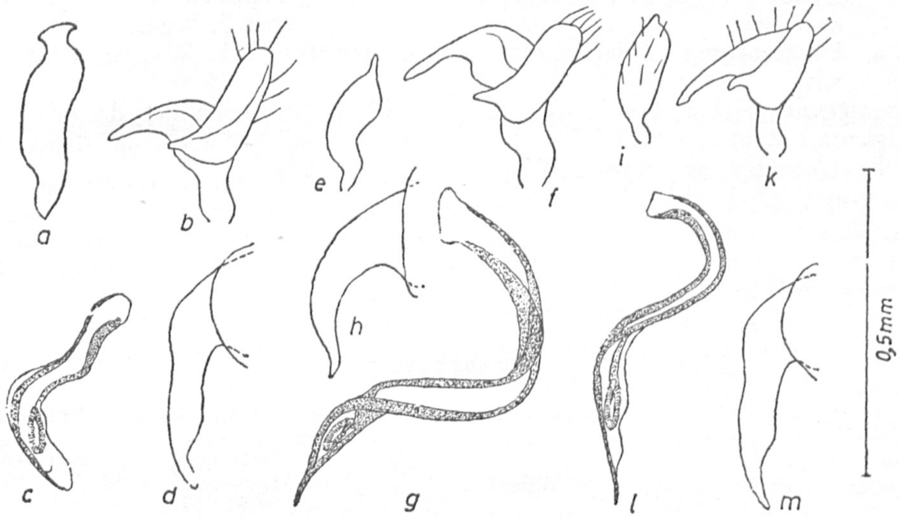

Abb. 3. Genitalien des Männchens.
a—d = *Pronototropis punctipennis* Fieb. e—h = *P. longicornis* Reut. i—m = *P. (Jafara) brevirostris* E. Wgn. — a, e, i = rechtes Paramer von oben, b, f, k = linkes Paramer von oben, c, g, l = Vesika von rechts, d, h, m = Apikalteil der Theka von rechts.

spitze und in ganzer Länge mit den Klauen verbunden. Bei *Pronotropis* Reut. ist es entweder viel kürzer als seine Entfernung von der Klauenspitze (Fig. 2, b+c) oder es ist in ganzer Länge frei und von der Klaue entfernt (Fig. 2d).

5. Bei *Pleuroxonotus* Reut. berühren die Augen bei Betrachtung von oben (Fig. 1a) die Vorderecken des Pronotum, bei *Pronototropis* Reut. (Fig. 1, e, i, n) sind sie von den Vorderecken des Pronotum etwas entfernt und der Kopf hat hinter den Augen einen kurzen, halsartigen Teil.

Die Aufführung dieser Merkmale soll keineswegs bedeuten, dass der Verfasser sie für gute Gattungsmerkmale hält. Es ist vielmehr durchaus möglich, dass beide Gattungen vereinigt werden müssen. Diese Merkmale sollen vielmehr ein Hilfsmittel sein, bis zur Lösung des hier vorliegenden Problems beide Gattungen zu trennen.

Der Verfasser konnte den Holotypus von *Pleuroxonotus nasutus* Reut. untersuchen. Er befindet sich in der Sammlung Reuter im Zoologischen Museum Helsingfors und trägt die Nummer 11578. Es handelt sich hier um ein stark beschädigtes Weibchen, das bei der Beschreibung durch Reuter (1904) noch in besserem Zustand gewesen sein dürfte. Das ergibt sich daraus, dass Reuter einige Merkmale anführt, die sich heute nicht mehr mit Sicherheit beurteilen lassen. So gibt Reuter z.B. an, dass an den Tarsen das 3. Glied etwas länger sei als das 2., die Endglieder der Fühler braun seien, das Corium innen einen undeutlichen braunen Fleck habe und der Innenrand des Clavus schmal schwarz gesäumt sei.

Wir müssen also die bisherige Ordnung wie folgt bestehen lassen:

A. Gattung *Pleuroxonotus* Reuter, 1904

1. *nasutus* Reuter, 1904

B. Gattung *Pronototropis,* Reuter, 1870

Typus generis: *P. punctipennis* Fieb.

a. Untergattung *Pronototropis* s.str.

2. *punctipennis* (Fieber, 1864)
3. *longicornis* Reuter, 1900

b. Untergattung *Jafara* E. Wagner, 1971

Typus subgeneris: *P. brevirostris* E. Wgn.

4. *brevirostris* E. Wagner, 1971

Herrn M. Meinander, der mir die Type auslieh, sei auch an dieser Stelle bestens gedankt.

Literatur

REUTER, O. M. 1904: Capsidae novae rossicae. — Öfversigt Finska Vetenskaps Soc. Förhandl. 46(4):7—9.

LINNAVUORI, R. 1971: On the family Miridae (Het.). — Ann. Entomol. Fennici 37:126—135.

WAGNER, E. 1971: Drei neue Heteropteren aus Iran (Heteroptera, Miridae). — Reichenbachia 14:31—37.

Rutsystemsbeteckning för angivande av fyndplats inom biologisk forskning

De naturvetenskapliga museerna, samfunden och föreningarna har kommit överens att inom de biologiska vetenskaperna använda enhetskoordinatsystemet för betecknande av fyndplatser och iakttagelseorter. Det är därför att rekommendera att alla entomologer inför koordinatbeteckningar på de etiketter de låter trycka.

Enhetskoordinatsystemet är benämningen på ett rätvinkligt koordinat- och rutsystem, vars p-axel sammanfaller med meridianen E 27° och som är angivet på de grund- och topografiska kartor i skala 1 :20 000 och 1 : 100 000 som har utkommit efter år 1962, samt på de år 1967 utkomna generalkartorna i skala 1 : 400 000. Ifrågavarande koordinatsystem anges på de nämnda kartorna med röda (bruna) rutor eller marginalbeteckningar. Enhetskoordinaterna är desamma som de på grundkartorna med svart angivna sifferbeteckningar och rutor, vilkas p-axel sammanfaller med p-axeln i enhetskoordinatsystemet.

Koordinattalet betecknar ett kvadratiskt område, vars storlek bestäms av antalet siffror i koordinatbeteckningarna. Områdena kan sammanslås till större eller delas i mindre rutor med decimaler. Därvid är koordinatbeteckningarnas sifferantal i motsvarande grad mindre eller större. Varje rutas decimalindelning sker med siffrorna 0 till 9 nedifrån uppåt och från vänster åt höger. Koordinatbeteckningen är tvådelad. Dess första del anger rutans p-koordinat och dess senare del rutans i-koordinat. Mellan dessa delar kan i skrift användas ett kolon. p-koordinaten börjar alltid med siffran 6 eller 7, vilken betecknar 1 000 km. i:s värde i origo vid p-axeln är 500 km. Antalet siffror i koordinattalen är sålunda alltid udda och p innehåller alltid en siffra mera än i.

Angivande av koordinaterna för en ort eller plats sker med den noggrannhet, som i det aktuella fallet kan betecknas som ändamålsenlig. Om t.ex. platsens läge anges med en noggrannhet av 1 kvadratmil, är koordinattalet 5-siffrigt (t.ex. 669 : 40 eller 66940). Om angivelsen sker med noggrannheten av 1 ha är koordinattalet 9-siffrigt (t.ex. 66940 : 4009 eller 669404009). I sammandrag gällande utbredningsuppgifter och i andra därmed jämförbara fall insamlas uppgifterna i regel per grundruta, varmed avses en ruta vars yta är 1 kvadratmil. Vid lokala undersökningar används givetvis mindre rutor.

Utöver platsangivelse baserad på rutsystemet bör platsbeteckningen lämpligen samtidigt även ske med angivande av kommunens, byns, terrängformationers osv. namn, likaså skall beteckningarna för de naturvetenskapliga provinserna fortfarande användas. Vid användningen av kommunernas namn är det skäl att beakta, att kommunnamnet betecknar det område, som kommunen omfattade under det år, under vilket iakttagelsen gjordes.

Finland 669 : 40
N. Sibbo
24. VII. 1971
Kalle Johansson

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Taxonomische Bemerkungen über einige Blattwespen I (Hymenoptera, Symphyta)

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Abstract

Descriptions of the hitherto unknown males of *Pristiphora sootryeni* Lindqvist, *P. subbifida* Thomson and *Amauronematus eiteli* Saarinen are given. It is pointed out that the existing descriptions of the male of *Amauronematus sagmarius* Konow are based on misidentified specimens and the male is still unknown. *Pristiphora carpentieri* Konow which was synonymized with *P. subbifida* Thomson, *Amauronematus intermedius* Malaise which was synonymized with *A. neglectus* Kirby and *A. carbonarius* Hellén which was synonymized with *A. groenlandicus* Malaise are stated to be distinct species. An expectation by Benson that *A. groenlandicus* may be a synonym of *A. hyperboreus* Thomson is stated wrong. All specimens recorded from Finland as *A. nitidipleuris* Malaise are established to belong to *A. cornutus* Lindqvist and *A. nitidipleuris* is not yet known from Finland. *Arge expansa* Klug is a synonym of *A. fuscipes* Fallén.

Arge expansa Klug

Diese schon i.J. 1834 beschriebene Blattwespe ist von den Autoren sehr ungleich gedeutet worden. Von Konow wurde sie als eine var. von *A. fuscipes* Fall. aufgefasst während Enslin (1917: 602) sie als eine Form von *A. ciliaris* L. deutete. Benson (1951:34) schloss sich erst der Ansicht Konows an, aber später betrachtete er (1962:387) *expansa* als eine Form der sehr variablen nordamerikanischen Art *A. clavicornis* F. Schliesslich fasste Werzhutskii (1966:33) *expansa* als eine var. von *A. ustulata* L. auf. Also höchst abweichende Ansichten.

Aus dem Museum für Naturkunde an der Humboldt-Universität zu Berlin habe ich in entgegenkommender Weise den Typus von *expansa* zur Ansicht erhalten, wodurch ich in der Lage bin, die bisher schwer zu deutende Art klären zu können. Um sofort zur Sache zu gehen ist hervorzuheben, dass *expansa* ein *fuscipes*-Exemplar normaler Grösse und mit hellen Tibien und Tarsen ist, ausser der schwärzlichen Spitze der Hintertibien mit den Tarsen.

Die fehlerhaften Deutungen der *expansa* sind eine Folge der knappen Beschreibung, wo nicht einmal die Grösse angegeben wird. Normal gefärbte *fuscipes*-Exemplare sind leicht erkennbar, aber in diesem Falle haben die hellen Tibien und Tarsen sowie die fehlende Grösse die Deutung der *expansa* allzuviel erschwert.

Pristiphora sootryeni Lindqvist

Als ich (1955:46) diese Art beschrieb, lag mir nur ein in Varanger, Småströmmen, im nördlichsten Norwegen erbeutetes ♀ vor. Seitdem hat es mich manchmal gewundert, dass die Art in Finnisch-Lappland nicht gefunden worden ist, obwohl finnische Entmologen fast alljährlich Lappland besuchen und bedeutende Mengen von Blattwespen einsammeln.

Nunmehr liegen aber finnische Funde von *sootryeni* vor. Unlängst erhielt ich zur Bestimmung einige Nematinen, unter denen ich ein ♀ von *sootryeni* entdeckte. Durch die sehr niedrige Zähnung ist es sofort erkennbar und kann nicht verkannt werden (LINDQVIST 1955:37 Abb. 10) Das ♀ hatte J. Virtamo aus einer in *Ks:* Kuusamo, Oulanka, an *Oxytropis campestris* gefundenen Larve gezogen. Nun richtete sich mein Interesse darauf eventuell weitere Exemplare und vor allem das noch unbekannte ♂ zu entdecken. Ich hatte auch Glück dabei. Als Dr. med. V. Karvonen, der mehrmals Lappland besucht hat um Blattwespen einzusammeln, nach meinen Anweisungen sein Material von *Pristiphora puncticeps* Ths. untersuchte, entdeckte er darin zwei abweichende ♂♂, die bei näherer Untersuchung sich als *sootryeni* erwiesen. Ich beschreibe das ♂ wie folgt:

Färbung und skulpturelle Merkmale hauptsächlich wie beim ♀. Fühler jedoch kräftiger, lateral komprimiert, unten braun. Penisvalve Abb. 1. Länge 4 mm.

Das beschriebene ♂, am 2.VII.1967 in *Li:* Utsjoki im nördlichsten Lappland von V. Karvonen erbeutet, befindet sich in meiner Sammlung. — Ein zweites ♂ liegt noch aus *Li:* Inari, gleichfalls im nördlichen Lappland, (leg. V. Karvonen) vor.

Pristiphora subbifida Thomson

In Frankreich hatte CARPENTIER (1901: 223) an *Acer campestris* und *A. pseudoplatanus* Blattwespenlarven gefunden und aus ihnen Imagines gezogen. Die Wespen entsprachen ziemlich gut der Beschreibung von *Pristiphora subbifida* Ths., weshalb er die Larven als solche dieser Art beschrieb. Im darauf folgenden Jahre beschrieb aber KONOW (1902: 178) die Wespen als Vertreter einer eigenen Art unter dem Namen *Pristiphora carpentieri.* ENSLIN (1916:536), fasste aber *carpentieri* als eine var. von *subbifida* auf, weil die Imagines nur unbedeutend von einander abwichen.

Nunmehr hat es sich herausgestellt, dass *subbifida* und *carpentieri* als verschiedene Arten aufzufassen sind. In *Ta:* Pälkäne in Südfinnland ist es Forsttechniker J. Kangas gelungen, an *Populus tremula* gesellig lebende Larven zu finden und aus ihnen nicht nur ♀♀ sondern auch ♂♂ zu ziehen. Diese Imagines können nur *subbifida* vertreten. Obglech die ♀♀ dieser Art und der von *carpentieri* einander erheblich gleichen, muss es sich um getrennte Arten handeln. Ich erwähnte schon die Wirtspflanzen, die getrennte Arten voraussetzen. Weiter lebten die *subbifida*-Larven gesellig, die von *carpentieri* aber nicht oder kaum, da über eine derartige Lebensweise nichts erwähnt worden ist. Weiter waren die *carpentieri*-Larven einfarbig grün, die von *subbifida* aber nicht.

Das *subbifida*-♂ war bisher unbekannt, und ich beschreibe es, wie folgt:

Die Färbung weicht von der des ♀ dadurch ab, dass der Hinterleibsrücken grösstenteils schwarz ist, und die mittleren Tergite lateral gelblich sind. Die Fühler sind etwas kürzer etwa zweieinhalbmal so lang wie die Kopfbreite, deutlich kräftiger, etwas komprimiert und ausgedehnter gelblich. Costa und Stigma bräunlich, Stigmenmitte heller. Penisvalve Abb. 2. Länge 4,5 mm.

Das beschriebene ♂, am 23.V.1962 e larva von J. Kangas in *Ta:* Pälkäne gezogen, befindet sich in meiner Sammlung.

Über das Aussehen der Larven wurden leider keine Notizen gemacht da Kangas glaubte, Larven von *Pristiphora discoidalis* Ths. gefunden zu haben. Dies deutet darauf hin, dass die Larven nicht einfarbig grün waren.

Amauronematus intermedius Malaise und *A. neglectus* Kirby

Den paläarktischen *Amauronematus intermedius* Mal. hat BENSON (1962:400) mit dem nearktischen *A. neglectus* Kirby synonymisiert, wobei er gewohnheitsmässig die Synonymisierung nur feststellt, ohne sie irgendwie zu kommentieren. Dagegen vergleicht er den paläarktischen *A. mundus* Knw mit *neglectus.* Warum er diese Art als Vergleichobjekt ausgewählt hat und nicht *intermedius,* der ja in Frage hätte kommen müssen, verstehe ich nicht.

A. neglectus ist nach Benson eine sehr variable Blattwespe, deren Hinterleibsrücken von einfarbig gelb bis fast ganz schwarz, und Mesopleuren von ganz ungeschwärzt bis ganz schwarz gefärbt sein können. Dagegen ist die Schwärzung von *intermedius* sehr gering, indem Mesopleuren und Mesosternum nie geschwärzt sind, und am Hinterleibsrücken nur der erste Tergit schwarz und der Rest des Rückens braun sind. Diese Färbungen beider Arten beziehen sich nur auf die ♀♀, während die ♂♂ ganz anders, d.h. fast ganz schwarz sind.

Es ist sehr bedauerlich, das Benson über die Säge oder Penisvalve bei *neglectus* nichts äussert. Deswegen und weil die Färbung dieser Art stark variabel ist, die von *intermedius* aber nicht, kann ich mit Bensons Synonymisierung nicht einverstanden sein. Meiner Ansicht nach ist *intermedius* eine eigene Art.

Amauronematus eiteli Saarinen

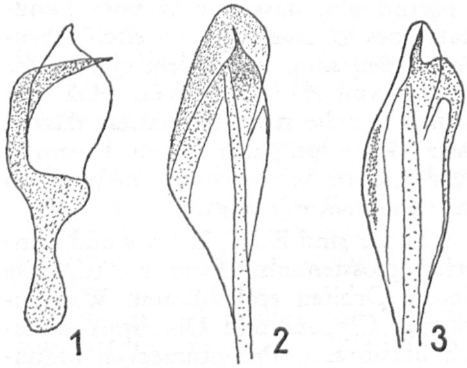
Als Saarinen (1948:82) diese seltene Art beschrieb, lagen ihm vier ♀♀ aus weit von einander gelegenen Orten vor. Der älteste Fund war aus dem Jahre 1838, und der folgende wurde genau hundert Jahre später gemacht. Nach Saarinens Zeit sind noch einige neue Funde hinzugekommen.

Ich besitze ein *Amauronematus*-♂, das meiner Ansicht nach das bisher unbekannte ♂ von *eiteli* vertritt. Es hat fast ganz einfarbig blassbraune Beine, was darauf hindeutet, dass das zugehörige ♀ keine dunkleren Beine haben kann. Das betreffende ♂ habe ich in der Umgegend von Helsingfors erbeutet, und in ganz Südfinnland gibt es nur zwei *Amauronematus*-Arten mit blassbraunen Beinen und unbekannten ♂♂. Die eine ist *A. sagmarius* Knw und die andere *A. eiteli.* Mein jetzt vorliegendes ♂ dürfte die erstere Art nicht vertreten, wie unten bei der Besprechung von *sagmarius* hervorgeht. Dagegen ist es viel wahrscheinlicher, dass mein ♂ *eiteli* repräsentiert. Darauf deutet u.a. der Umstand hin, dass unweit vom Fundplatze des ♂ zwei ♀♀ von *eiteli* erbeutet worden sind. Ausserdem gleicht das ♂ dem von *A. intermediuus* Mal., der *eiteli* sehr nahe steht, dermassen, dass es ohne Genitalpräparat kaum bestimmt werden kann. Ich beschreibe mein ♂ als das von *eiteli,* wie folgt:

Schwarz sind Kopf, Thorax und Hinterleib grösstenteils. Obere und teilweise hintere Orbiten rötlichbraun. Wangenanhang, Clypeus und Oberlippe weisslich blassbraun. Pronotumecken bräunlich. Tegulae verdunkelt. Unterseite des Hinterleibs mit einer bräunlichen Mittelstrieme, und Hinterrand der Sternite gleichweise gefärbt. Genitalplatte blassbraun. Beine gelblichbraun, Hintertarsen etwas verdunkelt. Flügel fast klar, Geäder braun, Costa und Stigma blassbraun.

Kopf fein und dicht punktiert, kaum glänzend, hinter den Augen etwas verengert. Scheitel etwas mehr als doppelt so breit wie lang,durch schwache Seitenfurchen begrenzt. Stirnfeld rundlich, schlecht abgegrenzt, Stirnwulst höckerartig, unbedeutend eingekerbt. Clypeus nicht tief ausgerandet. Fühler etwas mehr als doppelt so lang wie Kopfbreite, mässig dick, etwas komprimiert, Geisselglieder 3, 4 und 5 gleich lang, fast so lang wie Längsdurchmesser eines Netzauges. Thorax fein und dicht punktiert, Mesonotum wenig glänzend, Mesopleuren etwas matter. Schildchen doppelt so lang wie sein Anhang. Tergite fein skulptiert, glänzend. Tarsen kurz, innerer Hintersporn etwa so lang wie Spitze der Hintertibie, die Mitte des Metatarsus fast erreichend. Fortsatz des letzten Tergits den Segmentrand wenig überragend. Genitalplatte stumpf zugespitzt. Penisvalve Abb. 3. Länge 6 mm.

Das beschriebene ♂, am 12.VI.1955 in *N:* Helsingfors-Munksnäs von mir erbeutet,befindet sich in meiner Sammlung.



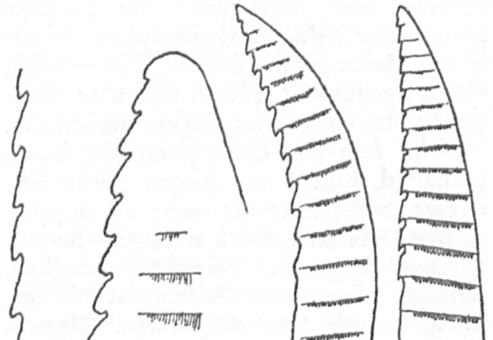


Abb. 1—3 Penisvalven folgender Blattwespen: 1 *Pristiphora sootryeni* Lqv., 2 *P. subbifida* Ths., 3 *Amauronematus eiteli* Saar.

Abb. 4—7 Sägezähnungen folgender *Amauronematus*-Arten: 4 Zähnung in der Mitte der Säge von *A. groenlandicus* Mal., 5 Sägespitze von *A. hyperboreus* Ths., 6 Säge von *A. cornutus* Lqv., 7 Säge von *A. nitidipleuris* Mal.

Amauronematus groenlandicus Malaise

Benson (1962:396) bezweifelt die Artbereichtigung dieser aus Ost-Grönland von Malaise (1933:3) beschriebenen Art und hebt hervor, dass sie vielleicht nur eine hocharktische Form von *Amauronematus hyperboreus* Ths. sei. Diese Vermutung ist unrichtig.

Aus dem Zoologisk Museum, Oslo, habe ich in entgegenkommender Weise den Typus von *groenlandicus* zur Ansicht gehabt. Zuallererst sah ich mir die Säge an. Glücklicherweise ragte sie fast ganz heraus, wodurch ich die Zähnung sehen konnte, ohne ein Präparat anfertigen zu brauchen. Die Zähne sind spitz (Abb. 4), welche Zähnungsform nur bei einigen wenigen *Amauronematus*-Arten vorkommt. Da ich kein Präparat machte, gibt die Abbildung das ungefähre Aussehen wieder, was in diesem Falle genügt. Da die Zähne bei *hyperboreus* stumpf sind (Abb. 5), ist der Unterschied sehr deutlich. Weiter ist hervorzuheben, dass *groenlandicus* durch auffällig dünnere Fühler und braune Färbung der Mesopleuren und stellenweise des Kopfes auf den ersten Blick von *hyperboreus* unterschieden werden kann.

Im Anschluss an *groenlandicus* synonymisierte Benson *Amauronematus carbonarius* Hellén mit ihm. Diese Synonymisierung ist auch falsch, Als Hellén (1970:21) *carbonarius* mit der Beschreibung von *groenlandicus* verglich, kam er zum Schluss, dass die Synonymisierung Bensons »sicher unrichtig» war. Die Richtigkeit dieser Ansicht kann ich bestätigen und als weiteren diesbezülichen Kommentar aufgeben, dass *carbonarius* und *groenlandicus* in derselben Hinsicht von einander abweichen wie *hyperboreus* und *groenlandicus.*

Amauronematus sagmarius Konow

Das ♀ dieser Art ist in ganz Finnland eine ziemlich häufige Art auf feuchten *Salix*-Biotopen, wogegen das ♂ noch als unbekannt für die Wissenschaft zu betrachten ist. Zwar hat KONOW (1895: 177) es beschrieben, aber die Beschreibung bezieht sich kaum auf ein wahres *sagmarius*-♂. Da ENSLIN (1915:402) in seiner Fauna sich auf KONOW stützt, ist seine Beschreibung gleichfalls als unzutreffend anzusehen.

In seiner Fauna der britischen Blattwespen beschreibt BENSON (1958:189) das *sagmarius*-♂ auf eine abweichende Weise, und um sein diesbezügliches Exemplar kennenzulernen, schrieb ich ihm schon vor Jahren mit der Bitte, es zur Ansicht zu erhalten. Er kam meinem Wunsch entgegen, und als ich die Wespe untersuchte, stellte es sich heraus, dass sie ein ♂ von *Pteronidea ferruginea* Först. war. Als ich Benson darauf aufmerksam machte, schrieb er mir folgendes:

> »I agree with you that the specimen sent as *Amauronematus*-♂ is a *Nematus* sp. and not *Amauronematus* at all. Dr. Perkins must have made a mistake in rearing or in labelling the specimens. I have no specimen now which I claim to be *Amauronematus sagmarius* males and perhaps they do not exist.»

Unabhängig davon, ob ein Irrtum vorliegt oder nicht, können wichtige Schlüsse aus BENSONS Äusserung gezogen werden. Die Beschreibungen KONOWS und ENSLINS akzeptiert er nicht, und das in seiner Fauna beschriebene *sagmarius*-♂ wird von ihm nicht mehr als zutreffend anerkannt. Schliesslich gesteht er, dass ihm kein ♂ bekannt ist, das er als das von *sagmarius* ansehen kann, weshalb er die Existenz dieses ♂ bezweifelt.

Kürzlich hat HELLÉN (1970:15) »mit einigem Bedenken» eine Beschreibung des *sagmarius*-♂ geliefert. Dabei hat er aber ein ♂ von *A. excellens* Fors. als das von *sagmarius* aufgefasst, was ich durch Untersuchung des betreffenden Tiers feststellen konnte.

Auf diesem Stadium war für mich noch die Frage offen, um welche Blattwespe es sich bei dem Typus vom *sagmarius*-♂ in Wirklichkeit handeln konnte. Ich schrieb daher an das Ungarische Naturwissenschaftliche Museum, Budapest, mit der Bitte, den Typus zur Ansicht zu erhalten. Ich konnte mit liebenswürdigem Entgegenkommen rechnen, und zwei als Typen etikettierte ♂♂ wurden mir zugesandt. Auf den ersten Blick stellte es sich dabei heraus dass sie ein für mich ganz unerwartetes Aussehen hatten. Sie waren nämlich meines Erachtens u.a. zu gross und ausgedehnt schwarz. Die Untersuchung der Penisvalve erwies dann, dass beide »*sagmarius*»-♂♂ *Amauronematus stenogaster* Först. vertraten. Diese Blattwespe, die als die dunkleste Form des variablen *A. fallax* Lep. angesehen worden ist, wurde von mir (1972:69) kürzlich als eine eigene Art erklärt.

Somit kann nur der Schluss gezogen werden, dass das ♂ von *sagmarius* als unbekannt für die Wissenschaft anzusehen ist.

Amauronematus cornutus Lindqvist

Als HELLÉN (1970:34) *Amauronematus nitidipleuris* Mal. kürzlich besprach, erwähnte er, dass der von mir (1962: 118) nach einem einzigen ♂-Funde beschriebene *A. cornutus* das ♂ von *nitidipleuris* sei. Diese Ansicht kann ich nicht anerkennen, wie aus dem folgenden hervorgeht.

Während beim *nitidipleuris*-♀ nach MALAISE (1931:45) nur die Oberlippe weiss ist, sind beim *cornutus*-♂ ausserdem der Clypeus, die Mandibeln, der Wangenanhang und die Trochanteren weisslich, die hinteren Orbiten blassbraun und die Schläfenflecken rötlichbraun. Somit ist das *cornutus*-♂ heller gezeichnet als das *nitidipleuris*-♀. Nun verhält es sich bei den *Amauronematus*-Arten so, dass die ♂♂ nie heller als die ♀♀ sind. Daraus ist der Schluss zu ziehen, dass die betreffenden Blattwespen nicht identisch sein können.

Als ich (1940:82)*nitidipleuris* als neu für Finnland meldete, handelte es sich um ein von Conde bestimmtes Exemplar. Seitdem ist diese Art als in Finnland vorkommend betrachtet worden. Nun hat es sich aber herausgestellt, dass Condes Bestimmung falsch ist. Als ich die Säge des Typus von *nitidipleuris* kürzlich untersuchte, zeigte sich, dass sie durch ihre gebogene Form und die ziemlich grossen Zähne (Abb. 6) sehr deutlich von der geraden und feingezähnten Säge (Abb.7), die ich bisher für die von *nitidipleuris* gehalten habe abwich. Um zu ermitteln, um welche Art es sich in Wirklichkeit bei der von Conde falsch bestimmten Wespe handelte, kam ich unschwer aus der Beschreibung HELLÉNS (1970) auf die rechte Spur. Er erwähnt nämlich, dass das *cornutus*-♂ dem ♀ von *nitidipleuris* erheblich glich. Daraus zog ich den Schluss, dass er mit *nitidipleuris* nicht den wahren, schwarzeren *nitidipleuris* sensu Malaise, sondern den helleren *nitidipleuris* sensu Conde meinte. Als ich nun einige Exemplare der letzteren Art ansah, konnte ich nur feststellen, dass sie ♀♀ von *cornutus* waren. Meine früheren Sägeabbildungen (1945: 105 Abb. 4 und 1971:125) vertreten somit *cornutus*. Da ich das ♂, und HELLÉN beide Geschlechter dieser Art schon beschrieben hat, ist es unnötig, die Beschreibung der Art zu wiederholen. Bei dieser Gelegenheit wähle ich nur den ♀-Typus, wie folgt.

Der Lectotypus, das ♀, aus einer am 2.V.1951 in Le: Kilpisjärvi im nördlichsten Lappland von mir gefundenen Larve gezogen, befindet sich in meiner Sammlung.

Da *cornutus* sowohl aus dem nördlichsten wie aus dem südlichsten Finnland bekannt ist, dürfte er auch in den zwischenliegenden Gebieten vorkommen. Er ist aber selten.

HELLÉN erwähnt, dass das von mir (1945:106) beschriebene *nitidipleuris*-♂ mit ganz eigenartiger Penisvalve (1962: 119 Abb. 26) eine andere Art als *nitidipleuris* sensu Hellén ist. Dies ist eine richtige Bemerkung, denn es soll nicht diese Art (d.h. *cornutus)*, sondern *nitidipleuris* sensu Malaise vertreten, was es meines Erachtens tut. HELLÉN vermutet, dass es vielleicht das ♂ von A. *temporalis* Hellén sein könnte. Hierbei bin ich anderer Ansicht, weil das betreffende ♂ in Kamtschatka erbeutet worden ist, wo MALAISE seine *nitidipleuris*-♀♀ fand, während *temporalis* in Finnland gefangen wurde. Zu berücksichtigen ist ausserdem, dass der wahre *nitidipleuris* aus Finnland noch nicht bekannt ist.

HELLÉN (1971:83) synonymisierte *cornutus* mit *nitidipleuris* und entfernte ihn aus der Fauna Finnlands. Ich schliesse aber *cornutus* dieser Fauna wieder an und entferne *nitidipleuris.*

Amauronematus stenogaster Förster

Als ich (1972:69) diese Blattwespe kürzlich besprach, erwähnte ich, dass meines Wissens niemand ihr ♂ beschrieben hatte. Hier liegt ein bedauerlicher Lapsus meinerseits vor, denn ENSLIN (1915:377) beschreibt dieses ♂ ziemlich ausführlich, welcher Sache ich mich gar nicht erinnerte.

Zur Ökologie von *stenogaster* mag folgendes mitgeteilt werden. Einige finnische Entomologen haben auf einem *Salix rosmarinifolia*-Biotope Mengen von Imagines erbeutet und später Larven eingesammelt und aus ihnen Imagines gezogen. Es ist höchst wahrscheinlich dass *stenogaster* an die betreffende *Salix*-Art gebunden ist, und dass die von *Amauronematus*-Arten am meisten bevorzugte *Salix*-Art *phylicifolia* nicht akzeptiert wird. In Munksnäs, wo ich über 40 Jahre wohne und Blattwespen gesammelt habe, habe ich *stenogaster* nie erhalten, und die Ursache dazu ist allem Anschein nach der Umstand, dass hier *rosmarinifolia* nicht vorkommt.

Literatur

Benson, R. B. 1951: Hymenoptera Symphyta. — Handbooks for the Identification of British Insects. VI 2(a):1—49.

—»— 1958: Hymenoptera Symphyta. — Handbooks for the Identification of British Insects. VI 2(c):139—258.

—»— 1962: Holarctic Sawflies. Hymenoptera Symphyta. — Bull. Brit. Mus. (Nat. Hist.). XII(8):381—489.

Carpentier, L. 1901: Sur les larves de quelques Nématides (Hym.) Zeitschr. Hymenopt. Dipterol. I:1—368.

Enslin, E. 1915—1916: Die Tenthredinoidea Mitteleuropas IV. Deuts. Entomol. Zschr. Beiheft. Berlin. 311—538.

—»— 1917: Die Tenthredinoidea Mitteleuropas VI. — Deutsche Entomol. Zeitschr. Beiheft 539—662.

Hellén, W. 1970: Die Nematinen Finnlands II. (Hymenoptera Tenthredinidae). — Notulae Entomol. 50:1—37.

—»— 1971: Verzeichnis der in den Jahren 1966—1970 für die Fauna Finnlands neuhinzugekommenen Insektenarten. — Notulae Entomol. 51:73—91.

Konow, F. W. 1895: Analytische und kritische Bearbeitung der Gattung Amauronematus Knw. — Termes. Fuzetek. 18:166—185.

—»— 1902: Die Nematiden-Gattung Pristiphora Latr. (Hymenoptera Tenthredinidae) soweit dieselbe bisher aus der Paläarktischen Zone bekannt ist. — Annuare Mus. Acad. Sci. St. Petersbourg 7:161—187.

Lindqvist, E. 1940: Föreningsmeddelanden. Notulae Entomol. 20:82.

—»— 1945: Über Blattwespen der Amauronematus-Gruppe. — Notulae Entomol. 25: 102—108.

—»— 1955: Über einige Pristiphora-Arten aus Fennoskandien (Hym. Tenthredinidae). — Notulae Entomol. 35:35—50.

—»— 1962: Bemerkungen über paläarktische Blattwespen (Hym., Symph.). — Notulae Entomol. 42:105—127.

—»— 1971: Einige von R. Malaise aus Kamtschatka beschriebene Nematinen (Hymenoptera Tenthredinidae). — Notulae Entomol. 51:124—129.

—»— 1972: Zur Nomenklatur und Taxonomie einiger Blattwespen (Hymenoptera Symphyta). — Notulae Entomol. 52:65—77.

Malaise, R. 1931: Entomologische Ergebnisse der schwedischen Kamtschatka-Expedition 1920—1922. — Arkiv Zool. 23(8):1—68.

—»— 1933: Eine neue Blattwespe aus Ost-Grönland. — Skrifter om Svalbard og Ishavet. 53:3—4.

Saarinen, A. 1948: Studien über die Amauronematus longiserra Ths.-Gruppe (Hym., Tenthredinidae). — Annales Entomol. Fennici. 14:59—85.

Werzhutskii, B. N. (Вержуцкий, Б. Н.) 1966: Пилильщики Прибайкалья. 164 S. Moskwa.

Litteratur

Kaestner, Alfred 1972: Lehrbuch der Spezielle Zoologie, Band I: Wirbellose, 3. Teil, Insecta: A. Allgemeiner Teil. Gustav Fischer, Jena. 272 sidor, 182 textfigurer. Pris 15 DM.

Medan denna bok var under tryckning avled författaren, professor Alfred Kaestner, känd zoolog från München. Redigeringen kom sålunda att utföras av en av hans kolleger, dr H. J. Müller. Arbetet är avsett att användas som kursbok vid undervisningen i zoologi vid ett universitet och utgör en introduktion i insekternas morfologi, fysiologi och ontogeni. Morfologi och fysiologi är här invävda i varandra till en naturlig helhet. Insekternas lokomotion behandlas rätt ingående. I samband med den postembryonala utvecklingen beaktas även diapausföreteelserna i detalj. Ett kort kapitel i slutet behandlar insekternas fylogeni och följer härvid Hennigs principer. I stället för en vanlig litteraturförteckning, som med beaktande av temats vidsträckta natur kunde ha blivit mycket omfattande, finner man under olika rubriker hänvisningar till sammanfattande arbeten.

Walter Hackman

»Entomologen» Årgång 1, 1972. En ny nordisk entomologisk tidskrift utgiven av Entomologiska Sällskapet i Lund.

Entomologiska Sällskapet i Lund utgav i drygt trettio år tidskriften »Opuscula Entomologica» som innehöll vetenskapliga uppsatser för det mesta på kongresspråk men också Sällskapets föreningsnytt med mötesreferat etc. I samband med startandet av den internordiska serien »Entomologica Scandinavica» nedlades Opuscula och Lundasällskapet blev utan en egen tidskrift. Nu återkommer Sällskapet med en ny tidskrift av annan karaktär som tydligen delvis skall ersätta det hål som Opuscula lämnade efter sig. Entomologen har planerats utkomma med två häften per år med sammanlagt c. 56 sidor och den första årgången föreligger. Artiklarna är tryckta på svenska och i första årgången finns dels artiklar med faunistiskt innehåll behandlande skalbaggar och fjärilar dels artiklar över entomologisk metodik, t.ex. två artiklar över framställning av genitalpreparat.

Lennart Cederholm som är anställd vid den nygrundade Centralen för Zoologisk Taxonomi har skrivit en artikel betitlad »Databehandling av entomologiska samlingar» där han berör Centralens uppgifter och den service den erbjuder. Intressant är bl.a. Centralens direktiv för tryckande av etiketter, vilka väl är avsedda att bli standard för Sverige. Direktiven skiljer sig något från de direktiv som de finländska biologiska sällskapen enats om. Som nationalitetsbeteckning föreslås samma förkortningar som använts t.ex. i bilarnas nationalitetsbeteckning och i postkoderna, alltså S för Sverige och SF för Finland. Skulle detta förfaringssätt bli internationell kutym vore det säkert ypperligt, som det nu är tycker jag det finns en liten risk för att beteckningen för Sverige (S.) skall tolkas som en förkortning för Syd, förkortningen för Norge (N.) som Nord e.d. I ställe för ett koordinatsystem har man tydligen i Sverige gått in för att använda beteckningen på motsvarande blad av den ekonomiska kartan i skalan 1:10.000.

I första årgången finner vi vidare en moderniserad förteckning över Sveriges Neuroptera och Mecoptera skriven av Bo Tjeder, där han tagit hänsyn till de många förändringar i nomenklaturen som skett på senaste tid. Tidskriften innehåller dessutom recensioner och mötesrapporter.

Alla entomologiska tidskrifter som utgivits i Norden har hittills haft ett strängt vetenskapligt innehåll, som varit helt ointressant för alla utom rena specialister. »Entomologen» går tydligen in för att bli en annan typs tidskrift och på basen av den första årgången vill jag rekommendera den också för amatörentomologer, speciellt skalbaggs- och fjärilssamlare. Prenumerationspris finns inte angivet men genom att bli medlem i Entomologiska Sällskapet i Lund erhåller man tidskriften för en årsavgift på Skr. 15:—.

Martin Meinander

Notulae Entomologicae LIII: 41—58, 1973

Taxonomische Kommentare zu mehreren Amauronematus-Arten aus Finnland (Hymenoptera, Tenthredinidae)

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Abstract

Comments on Hellén's paper: Die Nematinen Finnlands II, Notulae Entomol. 50:1—37. The following species, which by Hellén were synonymised with various species are considered valid: *A. amicula* Saarinen, *A. atratus* Lindqvist, *A. branderi* Lindqvist, *A. festivus* Saarinen, *A. glacialis* Saarinen, *A. hebes* Konow, *A. histrio* Lepeletier, *A. intermedius* Malaise, *A. leucopyga* Lindqvist, *A. macrophthalmus* Lindqvist, *nuorbinjargi* Saarinen, *A. nylundi* Lindqvist, *A. obesus* Lindqvist, *A. parviserrata* Lindqvist, *A. propinquus* Saarinen, *A. pseudofasciatus* Lindqvist, *A. saarineni* Lindqvist, *A. septentrionalis* Saarinen, *A. sollemnis* Konow, *A. sordidiapex* Lindqvist, *A. subnitens* Saarinen, *A. tristis* Lindqvist, *A. varians* Lindqvist, *A. viduatoides* Lindqvist. Two new synonyms are recorded: *A. pustulatus* Lindqvist synonym of *A. mcluckiei* Benson and *A. lanceatus* Hellén synonym of *A. nimbus* Benson. The specimens recorded by Hellén as *A. alpicola* Konow and *A. dalecarlicus* Malaise belong to *A. taeniatus* Lepeletier and *A. aeger* Konow respectively, and the former two species are thus not recorded from Finland. *A. rufus* Konow which by Hellén was reported as not occurring in Finland is recorded from Finland. Notes on some systematic characters which were used by Hellén are given and additional characters separating some critical species are added. The saw of *A. fahraei* Thomson is described.

Einleitung

Vor ein paar Jahren erschien Helléns (1970:1—37) zweiter Teil seiner Serie »Die Nematinen Finnlands» mit Bestimmungstabelle und näheren Beschreibungen und Aufgaben von den Arten der artenreichen finnischen Blattwespengattung *Amauronematus*. Nach Hellén sind aus Finnland 92 Arten angeführt worden, von denen jedoch 47 Arten, die meisten als Synonyme, gestrichen worden sind. Somit wäre der wirkliche Artbestand 45 Spezies. Dies ist eine sehr grosse Zahl und grösser als die aus irgendeinem anderen Lande. Betreffs der Artberechtigung vieler entfernter Arten bin ich anderer Ansicht als Hellén, und solche Arten habe ich der finnischen Fauna wieder angeschlossen. Näheres darüber unten.

In den letzten Jahrzehnten sind viele neue *Amauronematus*-Arten beschrieben worden, und da keine zusammenfassende Arbeit über sie da ist, war der Bedarf einer solchen Publikation lange schon gross. Helléns Absicht, diesen Mangel abzuhelfen, war daher sehr erwünscht, und wir finnische Tenthredinidologen sahen seiner Arbeit mit grossem Interesse entgegen.

Die Aufgabe war nicht leicht. Hellén war sich dieses Umstandes bewusst und verliess sich auf seine vieljährige, über ein halbes Jahrhundert lange entomologische Tätigkeit. Er war Optimist und hoffte, die Schwierigkeiten überwinden zu können. Er hatte sie aber unterschätzt.

Die *Amauronematus*-Arten sind meines Erachtens unsere schwierigste Blattwespengruppe. Viele Arten liegen nur in einigen wenigen Exemplaren vor, mehrere ♂♂ sind noch unbekannt, und die Larven sowie die Ökologie überhaupt kennt man entweder garnicht oder nur sehr mangelhaft. Viele Arten gleichen einander ziemlich viel, und die Variabilität ist eine häufige Erscheinung. Um viele Arten und besonders die ♂♂ zuverlässig bestimmen zu können, müssen die Sägen und vor allem die Penisvalven untersucht werden. Sie werden aber von HELLÉN allzuviel vernachlässigt, und Präparate fertigt er nie an. Seine Beschreibungen basieren fast ausschliesslich auf äusseren Merkmalen, die in vielen Fällen variabel sind und leicht zu falschen Bestimmungen führen.

Es ist HELLÉN wohl bekannt, wie variabel die äusseren Merkmale der *Amauronematus*-Arten sein können. Wenn er aber behauptet, dass dies auch für die Säge gilt, kann ich nicht einverstanden sein. Er äussert sich dabei, als ob er eine gute Sägenkenntnis hätte. In Wirklichkeit ist diese Kenntnis ziemlich minimal, und wie kann es anders sein, da er für Sägen so wenig Interesse hat, dass er keine Präparate anfertigt. Es genügt meistens nicht, aus der Sägescheide herausragende Sägen, wobei die Sägeblätter einander meistens mehr oder weniger decken, bei zu schwacher Vergrösserung anzusehen. HELLÉN hebt noch hervor, dass die taxonomische Bedeutung der Sägen von einigen Autoren stark übertrieben wird. Eher ist es so, dass er selbst die taxonomische Bedeutung unterschätzt. Das Aussehen der Sägen ist fast ausnahmslos sehr konstant, und einige wenige bekannte Ausnahmen dürfen nicht generalisiert werden, wie HELLÉN mit Vorliebe tut.

Die ♂♂ der *Amauronematus*-Arten sind viel schwerer als die ♀♀ an ihren äusseren Merkmalen zu determinieren, weshalb es noch wichtiger ist bei ihnen, die Penisvalven als die Sägen bei den ♀♀ zu untersuchen. Ich übertreibe nicht, wenn ich die taxonomische Bedeutung der betreffenden Organe hervorhebe. Hierbei stütze ich mich auf die Erfahrungen, die ich im Laufe der Jahre erworben habe. In drei Jahrzehnten habe ich etwa dreitausend Präparate von Sägen und Penisvalven untersucht, weshalb ich mich auf die dabei erhaltenen Ansichten verlasse.

Es ist sehr bedauerlich, dass HELLÉN seinen Aufsatz mit keiner einzigen Abbildung versehen hat. Mit möglichst vielen Abbildungen von Sägen und Penisvalven hätte sein Schreiben eine vielfach grössere Hilfe beim Bestimmen darbieten können, als was jetzt möglich ist.

Nach diesen Einleitungsworten gehe ich dazu über, hauptsächlich solche Arten zu kommentieren, wo ich anderer Ansicht bin als HELLÉN.

Besprechung der Arten

Amauronematus fallax Lepeletier

HELLÉN erwähnt, dass bei dieser Art die Körperfarbe sehr variabel sei, von fast ganz gelblich bis ganz schwarz. Die erstere Färbung passt am besten auf *A. rufus* Knw, die letztere wieder teils auf *A. stenogaster* Först., den ich (1972:69) kürzlich als eigene Art erklärt habe, teils auf die sechs von SAARINEN (1950:44) beschriebenen Arten der *fallax*-Gruppe.

Betreffs *rufus* erwähnt HELLÉN, er kenne diese bis jetzt »nur aus Sibirien» bekannte Art nicht. Als diese Worte geschrieben wurden, waren jedoch über 20 Funde der betreffenden Art aus Finnland bekannt. HELLÉN behauptet noch, dass das mir vorgelegene *rufus*-Exemplar, auf das ich mich stützte, als ich die Art als neu für Finnland meldete, ein *fallax* sei. Ich kann jedoch versichern, dass das betreffende Exemplar ein richtig bestimmter, wenn auch beschädigter *rufus* ist. An der ausgedehnten hell rötlichgelben Färbung ist das *rufus*-♀ sehr leicht zu identifizieren, und eine Sägeuntersuchung ist gar nicht notwendig.

Hellén (1971:83) entfernte *rufus* aus der Fauna Finnlands, ich schliesse ihn aber als eigene Art der finnischen Fauna wieder an.

Hellén stützt sich auf Benson (1962: 399), wenn er die obenerwähnten sechs von Saarinen beschriebenen Arten und ausserdem den gleichfalls von ihm (1949:55) beschriebenen *A. nuorbinjargi* als Synonyme von *fallax* erwähnt. Alle diese Arten sind vorläufig sehr mangelhaft bekannt, und ihre ♂♂ und Larven sowie die Ökologie sind ganz unbekannt. Ich bin der Ansicht, dass Benson unter solchen Umständen ganz falsch verfahren ist, wenn er die betreffenden Arten synonymisierte. Ich rechne damit, dass es sich jedenfalls teilweise noch herausstellen wird, dass es sich gar nicht um belanglose Synonyme zu handeln braucht.

Im Zusammenhang mit *fallax* bespricht Hellén auch *A. histrio* Lep. und zieht ihn als Synonym der ersteren Art ein (1971: 83). Er bezieht sich dabei darauf, dass Brischke und Zaddach, Malaise und Conde *histrio* nicht für eine eigene Art hielten. Seiner eigenen Ansicht nach könnte *histrio* als eine ökologische Rasse von *fallax* betrachtet werden, weil er »vorläufig nicht scharf morphologisch unterschieden werden» kann. Hierzu ist hervorzuheben, dass es gar nicht notwendig ist, morpologische Unterschiede zu entdecken, weil Sägen- oder Genitalienunterschiede, larvale oder sonstige ökologische Merkmale sehr gute Artkriterien vertreten können. Wie aus den Abb. 2 und 1 hervorgeht, ist der Unterschied zwischen den Penisvalven von *histrio* und *fallax* so auffällig, dass keine Unsicherheit vorliegt, ob es sich um gut getrennte Arten handelt. Die erstere hat auf der ventralen Hälfte(im Bilde rechts) kräftige Dorne, die *fallax* fehlen, und die dorsale Hälfte ist unbeschuppt, bei *fallax* aber beschuppt. Die Sägen beider Arten weichen weniger voneinander ab.

Was wieder die Larven betrifft, so ist hervorzuheben, dass Lorenz und Kraus (1957:200 und 203) *histrio* für eine eigene Art halten. Ökologisch ist noch zuzufügen, dass *histrio* eine Art trockener Biotope mit z.B. *Salix caprea* ist, während *fallax* auf feuchten Biotopen mit z.B. *Salix phylicifolia* vorkommt.

Es unterliegt keinem Zweifel, dass *histrio*, den Hellén als synonym mit *fallax* betrachtete und aus der Fauna Finnlands entfernte, eine eigene Art ist. Ich schliesse ihn deshalb der finnischen Fauna wieder an.

Amauronematus schlueteri Enslin

Das ♀ dieser *fallax* nahestenden Art ist leicht an der Sägescheide, die fast die Form eines gleichseitigen Dreiecks hat, zu erkennen. Um so schwerer ist es aber, das ♂ am äusseren Aussehen zu identifizieren. Zwar erwähnt Hellén (1970:11) einige Merkmale, die aber variabel sind und für eine richtige Bestimmung nicht genügen. Es ist mir mehr als einmal passiert, dass vermutete *schlueteri*-♂♂ bei der Untersuchung der Penisvalve sich als *fallax*-Stücke erwiesen haben. Auch umgekehrte Fälle können vorkommen. Das einzige zuverlässige Merkmal des *schlueteri*-♂ repräsentiert die Penisvalve, die sehr kräftig bedornt ist (Abb. 3), während die von *fallax* (Abb. 1) so gut wie unbedornt ist.

Hellén behauptet, dass ein von mir als *A. atratus* Lqv. determiniertes ♂ zu *schlueteri* gehöre, und dass die Penisvalve von *atratus* der von *schlueteri* ganz ähnlich sei. Aus den Abbildungen 4 und 3 geht aber hervor, wie deutlich der Unterschied in Wirklichkeit ist. Bei *schlueteri* ist die Penisvalve kräftig bedornt, bei *atratus* aber unbedornt.

Als eine Folge des falsch gedeuteten *atratus*-♂ entfernte HELLÉN (1971:83) diese Art aus der Fauna Finnlands. Ich schliesse aber *atratus* als eigene Art der finnischen Fauna wieder an.

Amauronematus longiserra Thomson

Im Zusammenhang mit *A. longiserra* Ths. bespricht HELLÉN auch die nahestehende *Amauronematus*-Art *intermedius* Mal. Nicht nur die Färbung, sondern auch die skulpturellen Merkmale dieser Arten haben ein ziemlich gleichartiges Aussehen, was leicht zu Fehlbestimmung führen kann. So ist es HELLÉN geschehen, wie aus dem folgenden hervorgeht.

Als ich die Beschreibungen von *longiserra* und *intermedius* gelesen hatte, kamen sie mir in mancher Beziehung unklar vor, weshalb ich sie unmittelbar aufs neue durchlesen musste. Dabei stellte sich unwiderleglich heraus, dass HELLÉN die betreffenden Arten voneinander nicht unterscheiden konnte. Er behauptet z.B., dass die Sägezähnung von *longiserra* »stark variabel» sei, und dass bei *intermedius* »die Form der Sägezähne beträchtlich variiert.» Hierbei wird die Variabilität stark übertrieben. Zwar ist es nicht unmöglich, an den Zähnen gelegentlich Abweichungen feststellen zu können; dabei handelt es sich aber um belanglose Unregelmässigkeiten, die das Gesamtbild der Zähnung gar nicht beeinflussen und auch die richtige Bestimmung nicht erschweren. Eventuelle Fälle von Variabilität bei *longiserra* und *intermedius* spielen keine Rolle, denn die Sägezähnungen sind derart verschieden (Abb. 12 und 13), dass es äusserst leicht ist, die Arten von einander zu unterscheiden.

Andere Unrichtigkeiten sind, dass bei *longiserra* die Genitalplatte »hell» sei, obgleich sie ganz oder grösstenteils schwarz ist. Bei *intermedius* dagegen ist sie hell. Weiter wird in der Bestimmungstabelle der ♂♂ erwähnt, dass die Schenkel bei *longiserra* mehr oder weniger hell seien. Diese Färbung bezieht sich auf *intermedius*, während die Schenkel bei *longiserra* grossen- oder grösstenteils schwarz sind. Weiter hebt HELLÉN hervor, dass *longiserra* über ganz Finnland verbreitet sei. Dies ist nicht stichhaltig, denn die Art kommt nur in Südfinnland vor, während *intermedius* bis zum nördlichsten Lappland verbreitet ist. Es ist somit ganz klar, dass HELLÉN die betreffenden Arten nicht voneinander unterscheiden konnte.

Nun erbat ich mir von HELLÉN aus seinem *longiserra*-Material solche ♀♀ zur Ansicht, deren Sägen mehr oder weniger sichtbar waren. Er überliess mir 10 Stück, und als ich ihre Sägen untersuchte, konnte ich mit Leichtigkeit feststellen, dass 9 von ihnen *intermedius* vertraten, und das zehnte Stück war ein *longiserra*, der unzweifelhaft HELLÉN unbewusst versehentlich in das Material mitgekommen war. Die skulpturellen und hauptsächlichen Färbungsunterschiede zwischen den betreffenden Arten sind in der Tat so unbedeutend, dass Fehlbestimmungen sehr leicht unterlaufen können.

Ferner ist hervorzuheben, dass die Penisvalven von *longiserra* und *intermedius* (Abb. 5 und 6) deutlich genug voneinander abweichen, um den Schluss zu rechtfertigen, dass es sich um getrennte Arten handelt.

Bei *longiserra* und späterhin auch bei einigen anderen Arten spricht HELLÉN von »aufwärts» gerichteten Zahnspitzen. Dieser Ausdruck kann leicht missverstanden werden, weshalb es, da die Zähne am ventralen Rande der Säge gelegen sind, richtiger gewesen wäre, von abwärts gerichteten Zähnen zu sprechen.

HELLÉN ist nicht sicher, ob *intermedius* eine eigene Art ist, was daraus hervorgeht, dass er in der Unterrubrik diesen Namen mit einem Fragezeichen versehen hat. Und wenn er (1971:83) *intermedius* aus der Fauna Finnlands streicht, verfährt er gleicherweise. Es unterliegt keinem Zweifel, dass *intermedius* eine eigene Art ist, derart verschieden sind die Sägezähnungen und Penisvalven, wozu noch die oben erwähnten Färbungsunterschiede hinzukommen. Ich schliesse *intermedius* als eigene Art der finnischen Fauna wieder an.

Amauronematus mundus Konow

Das ♀ dieser Art unterscheidet sich durch seine ausgedehnt schwarze Färbung so deutlich von den anderen Arten der *longiserra*-Gruppe, dass es schon daran identifiziert werden kann. Es ist daher nicht notwendig, die Sägezähne zu untersuchen, die denen von *intermedius* und nicht *longiserra*, wie HELLÉN behauptet, sehr gleichen. Die Genitalplatte des ♂ ist nicht »oft schwarz», wie HELLÉN in der Bestimmungstabelle angibt, sondern immer hell. Hier liegt bei ihm eine Verwechslung mit *longiserra* vor.

Über die Penisvalve sagt HELLÉN, dass sie von der bei *longiserra* kaum abweichend sei, wobei er auf BENSONS Figuren (1958:190 Abb. 568 und 570) Bezug nimmt. Nun sind aber die Penisabbildungen BENSONS sowohl in diesem Falle als in vielen anderen mit zu wenig Sorgfalt gezeichnet, wobei vor allem die taxonomisch so wichtigen mikroskulpturellen Merkmale gelegentlich ganz fehlen oder mit zu wenig Präzision wiedergegeben sind, wodurch die Determination leicht zu falschem Ergebnis führen kann. Es ist daher fraglich, ob für die Abb. 568 ein richtig bestimmter *mundus* vorgelegen hat, und noch sicherer ist es, dass die Abb. 570 keinesfalls *longiserra* vertritt, sondern irgendeine andere Art. Es ist wahr, dass der Unterschied zwischen den Penisvalven von *longiserra* und *mundus* (Abb. 5 und 7) nicht besonders gross ist. Die apikale Valve von *longiserra* ist jedoch deutlich breiter, so dass man ohne Schwierigkeit entscheiden kann, welche von den beiden Arten die Penisvalve repräsentiert. Und ist man dabei unschlüssig, so kann man die ♂♂ voneinander dadurch unterscheiden, dass die Genitalplatte bei *mundus* blassbraun, bei *longiserra* aber ganz oder fast ganz schwarz ist.

Amauronematus longicauda Hellén

Diese Blattwespe gleicht habituell *A. longiserra* Ths. durch das seitlich zusammengedrückte Hinterleibsende und die lange Sägescheide. Sie unterscheidet sich aber durch die ein paar mm kleinere Körpergrösse und das schwarze Mesosternum. Den bemerkenswertesten Unterschied machen jedoch die langen, zapfenförmigen und weit voneinander gelegenen Sägezähne (Abb. 14) aus, wodurch die Zähnung ein ganz anderes Aussehen als bei *longiserra* (Abb. 12) erhält. Eine derartige Zähnung wie bei *longicauda* habe ich bei keiner anderen *Amauronematus*-Art gesehen.

Amauronematus fahraei Thomson

Da von der Sägezähnung dieser Art meines Wissens keine Abbildung im Schrifttum vorliegt, habe ich sie hier (Abb. 15) abgebildet. — HELLÉN erwähnt, dass das *fahraei*-♂ ihm unbekannt sei. Ich (1961:12) habe es jedoch vor Jahren beschrieben und seine Penisvalve gleichzeitig abgebildet.

Amauronematus viduatinus Malaise

Bei der Besprechung dieser Art beschreibt HELLÉN das bis dahin unbekannte ♂. Es ist fraglich, ob diese Beschreibung sich auf ein wahres *viduatinus*-♂ stützt. MALAISES Material dieser Art umfasste im ganzen 60 Exemplare, die alle ♀♀ waren. Da das ♂ der nahestehenden und nicht seltenen Art

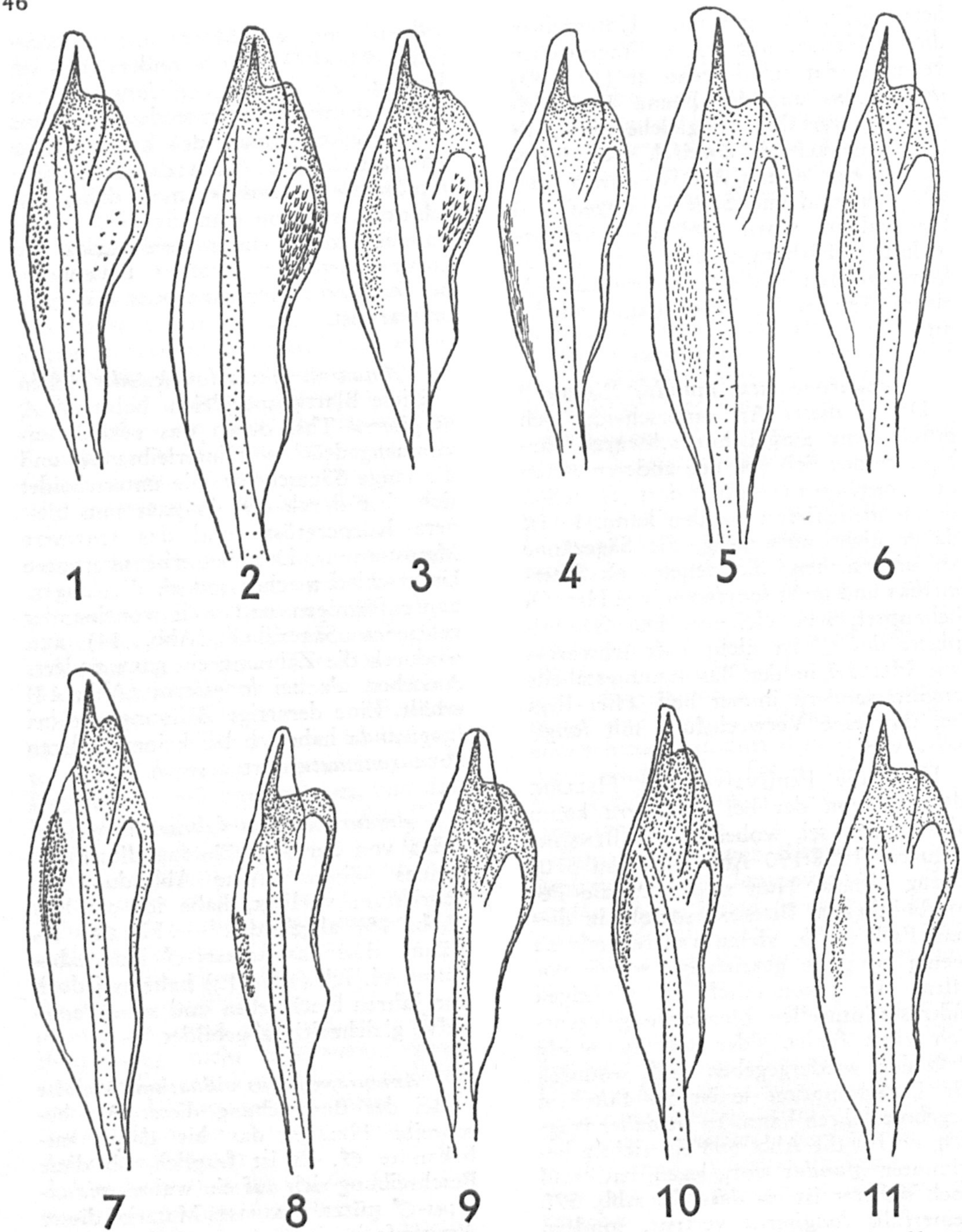

Abb. 1—11. Penisvalven folgender *Amauronematus*-Arten: 1. *A. fallax*, 2. *A. histrio*, 3. *A. schlueteri*, 4. *A. atratus*, 5. *A. longiserra*, 6. *A. intermedius*, 7. *A. mundus*, 8. *A. nimbus*, 9. *A. aeger*, 10. *A. mcluckiei*, 11. *A. sollemnis*.

A. sagmarius Knw immer noch unbekannt ist, ist es gar nicht ausgeschlossen, dass dies auch betreffs *viduatinus* gilt. Da HELLÉN nicht will, dass von seinen Blattwespen Präparate gemacht werden, kann ich mich über sein ♂ nicht näher äussern.

Amauronematus nimbus Benson (*lanceatus* Hellén n. syn.)

Als Typus von *A. lanceatus* hat HELLÉN ein von O. Ranin in *Le:* Kilpisjärvi erbeutetes und als *A. nimbus* Benson bestimmtes ♀ gewählt. Dieses Exemplar habe ich untersucht, wobei sich herausstellte, dass es sich um keine n. sp. handelte, sondern um ein ganz typisches Exemplar von *nimbus,* wie Ranin es bestimmt hatte. Ich ziehe daher *lanceatus* als Synonym von *nimbus* ein. Die erstere Art entferne ich aus der Fauna Finnlands und die letztere schliesse ich dieser Fauna wieder an.

A. nimbus ist durch die Säge sehr gut charakterisiert. Erstens sieht die Zähnung (Abb. 16) ganz so aus wie bei mehreren im Leben grünen, tot aber bleichen *Pteronidea*-Arten, und zweitens ist die Säge sehr zart und schwach chitinisiert. Eine ganz ähnliche Säge kommt meines Wissens nur bei einer einzigen anderen *Amauronematus*-Art, nämlich *humeralis* Lep., vor Diese Art und *nimbus* sind jedoch so ungleich, dass keine Verwechslung in Frage kommen kann.

HELLÉN erwähnt einige Unterschiede zwischen den ♀♀ von *lanceatus* und *nimbus.* Dabei handelt es sich jedoch nicht um arttrennende Merkmale. Ich besitze drei von BENSON in der Schweiz erbeutete *nimbus*-♀♀, an denen ähnliche Fälle von Variabilität festgestellt werden können.

Als vermutliches ♂ von *lanceatus/nimbus* beschreibt HELLÉN ein ♂, das er mit dem Allotypus-Etikett versehen hat. Durch Untersuchung der Penisvalve konnte ich feststellen, dass sie *nimbus* nicht vertrat. Sie ist mir unbekannt, und ich weiss nicht, ob sie zu einer beschriebenen oder unbeschriebenen Art gehört. Mehrere unidentifizierte ♂♂ liegen aus Finnland vor. Die Penisvalve des wahren *nimbus* ist auf Abb. 8 zu sehen.

Amauronematus hyperboreus Thomson

Von BENSON (1962:397) wurden die *Amauronematus*-Arten *poppii* Knw, *coracinus* Lqv., und *enslini* Lqv. als sichere und *anthracinus* Lqv., *macrophthalmus* Lqv. und *obesus* Lqv. als vermutliche Synonyme von *hyperboreus* erklärt. Der hauptsächliche Grund dafür dürfte der Umstand sein, dass die Arten einander mehr oder weniger gleichen, und dass die Sägezähnungen auch nicht besonders viel voneinander abweichen (LINDQVIST 1959:1—15). Ansichtsdifferenzen sind daher hierbei leicht verständlich. Weiter ist zu berücksichtigen, dass meiner Ansicht nach noch kein einziges, sicher richtig beschriebenes ♂ vorliegt. Desgleichen ist bisher die Larve keiner einzigen Art bekannt. Mit den betreffenden Synonymisierungen ist HELLÉN nicht ganz einverstanden, und auch ich kann mich ihnen nicht vorbehaltslos anschliessen. Näheres hierüber unten bei den respektiven Arten.

Im Zusammenhang mit *hyperboreus* bespricht HELLÉN *obesus* nur kurz und entfernte, obgleich er, wie auch BENSON, von seiner Artberechtigung nicht sicher war, (HELLÉN 1966:80) *obesus* aus der Fauna Finnlands. Meines Erachtens hat HELLÉN unrichtig gehandelt, als er auf Grund einer vermutlichen Synonymie die Art entfernte. Man müsste sich wohl auf ein möglichst sicheres Argument stützen.

Ein auffälliges Merkmal bei *obesus* ist der plumpe Habitus. In diesem Zusammenhange mag hervorgehoben werden, dass die beiden *obesus*-Exemplare (*rufomacula* Mal.), die MALAISE in Kamtschatka erbeutet hat, noch etwas plumper als das finnische Typus-Stück sind (LINDQVIST 1971:127). Das Schildchen ist erheblich breiter als bei *hyperboreus*, und das Hinterleibsende nebst Sägescheide und Cerci sind fast ganz schwarz.

Ich halte *obesus* für eine eigene Art und schliesse ihn der Fauna Finnlands wieder an.

Amauronematus alpicola Konow

Diese Blattwespe wird von HELLÉN ausführlich beschrieben, und er beschliesst sein Schreiben mit der Behauptung, alle ihm vorgelegenen und als *taeniatus* bezeichneten Stücke gehörten zu *alpicola*. Darüber, wie diese Arten voneinander zu unterscheiden sind, was mich sehr interessiert hätte, erwähnt er nichts.

A. taeniatus wurde schon i.J. 1823 beschrieben, und sie ist eine nicht seltene Blattwespe auf feuchten *Salix*-Biotopen. Die Art hat eine weite Verbreitung über das nördliche Paläarktikum, und in N. Amerika kommt sie gleichfalls vor. *A. alpicola* dagegen wurde erst i.J. 1895 beschrieben. Sie ist eine seltene Art, und Funde sind nach ENSLIN aus den höheren Gebirgen Mitteleuropas bekannt. Nun erwähnt aber ZIRNGIEBL (1953:238), dass *alpicola* nach den ihm bekannten Unterlagen in Deutschland nicht aufgefunden worden ist, wodurch ihr Verbreitungsgebiet beträchtlich reduziert wird. Nichts in der Verbreitung von *alpicola* spricht somit dafür, dass diese Art in Finnland anzutreffen wäre. Dagegen hat man damit zu rechnen, dass *taeniatus* in Finnland vorkommen dürfte.

Als ich (1938:82) *alpicola* als neu für Finnland meldete, handelte es sich um ein von CONDE bestimmtes Exemplar. Zu dieser Zeit kannten wir finnische Entomologen die nordischen Nematinen sehr schlecht, wogegen wir CONDE für einen hervorragenden Kenner dieser Blattwespen hielten. Später hat sich herausgestellt, dass wir seine Kenntnis überschätzten. Nachdem ich die Typustiere von *alpicola* gesehen hatte, teilte ich (1959:8) mit, dass diese Art als synonym mit *taeniatus* anzusehen war.

Dass HELLÉN (1971:83) *taeniatus* aus der Fauna Finnlands entfernte und ihn mit *alpicola* ersetzte, veranlasste mich, die Typus-Tiere von *alpicola* aufs neue zu untersuchen. Aus dem Institut für Naturschutzforschung, Eberswalde, DDR, wurden sie mir gütigst zugesandt, und diesmal kann ich mich mit besserer Sachkenntnis als früher über sie äussern. Die Wespen sind nicht in gutem Zustande, und dem ♀ fehlen die Fühler. Von der Säge hat CONDE ein Präparat angefertigt, wodurch die Sägescheide ein dickeres Aussehen als das ursprüngliche erhalten hat. Die Behaarung der Sägescheide ist undeutlich. Wichtige Merkmale können somit nicht berücksichtigt werden. Äusserlich kann man die Typen meiner Ansicht nach ebenso gut als Exemplare von *taeniatus* deuten.

Bei dieser Sachlage muss ich *taeniatus* besprechen. Es ist eine ziemlich variable Art. Um dies festzustellen, ist kein grosses Untersuchungsmaterial notwendig. Die Variabilität bezieht sich nicht nur auf die Färbung, sondern auch auf plastische und skulpturelle Merkmale. Die Schwärzung der Sternite kann vollkommen verschwinden, wobei der Bauch einfarbig hell wird. Die meistens ganz oder grösstenteils schwarzen Tegulae können gleichfalls ganz hell werden, und auf den Mesopleuren tritt eine rötlichbraune Färbung auf, und der Mittellappen des Mesonotums wird gleichfarbig gerandet.

Was die plastischen und skulpturellen Merkmale betrifft, sei erwähnt, dass die Fühler bald kürzer, bald länger sind. Im ersteren Falle ist das vierte Glied so lang wie das dritte, im letzteren Falle aber länger. Die Längen- und Breitenmasse des Scheitels sind nicht konstant, und stärker oder schwächer punktierte Mesopleuren können festgestellt werden.

Was *alpicola* betrifft, so soll nach ENSLIN der Kopf viel schmäler als der Thorax, auffällig klein sein, während HELLÉN nur sagt, dass der Kopf schmäler als der Thorax ist. In diesem Falle ist meine Ansicht die, dass beim *alpicola*-♀ — Typus der Kopf ganz so wie bei einem *taeniatus*-♀ aussieht. Einen anderen wichtigen Unterschied zwischen den betreffenden Arten soll die Sägescheide darstellen. Nach ENSLIN ist sie »gut doppelt» so dick wie die Cerci, bei *taeniatus* »etwa dreimal» und nach HELLÉN bei *alpicola* »fast dreimal» so dick. Der Unterschied zwischen diesen Ausdrücken ist nicht leicht festzustellen, und die Sache wird dadurch noch schwieriger, dass die Dicke der Sägescheide je nach der Lage der Säge in der Sägescheide sich verändert.

Die *taeniatus*-Beschreibungen ENSLINS und HELLÉNS sind ziemlich lang, aber aus ihnen geht nicht hervor, durch welche zuverlässige Unterschiede die betreffenden Arten voneinander abweichen, bzw. wie man sie richtig bestimmen kann. Solche Unterschiede gibt es meiner Ansicht nach nicht.

Bisher hatte ich nur äussere Merkmale berücksichtigt, und so ging ich dazu über, die Sägen und Penisvalven beider Arten zu untersuchen bzw. miteinander zu vergleichen. Hierbei stellte sich heraus, dass sie einander dermassen glichen, dass ich keinen Unterschied feststellen konnte, den ich so hätte deuten können, dass *alpicola* und *taeniatus* als verschiedene Arten anzusehen wären.

Als Stütze für seine Ansicht betreffs *alpicola* hebt HELLÉN hervor, dass KONOW, ENSLIN und BERLAND diese Blattwespe als eigene Art anerkennen. Dieser Umstand hat keine besondere Bedeutung für mich, denn die beiden ersteren Autoren haben weder die Säge noch die Penisvalve der *alpicola*-Typen gesehen und BERLAND allem Anschein nach auch nicht.

CONDE (1938:17) erwähnt *alpicola* aus Lettland und beschreibt die Larve mit Abbildung einiger Segmente. Diese Larve ist mir durch zahlreiche Funde gut bekannt, und ich habe Imagines gezogen, die meiner Ansicht nach weiter nichts als *taeniatus*-Exemplare sind.

Ich entferne *alpicola* aus der Fauna Finnlands und schliesse *taeniatus* dieser Fauna wieder an.

Amauronematus poppii Konow

Diese Art wurde von BENSON (1962: 397) als Synonym von *A. hyperboreus* Ths. erklärt, und demzufolge entfernte HELLÉN (1966:80) sie aus der Fauna Finnlands. Die Berechtigung dieser Synonymisierung bezweifelt HELLÉN indes einigermassen, da er hervorhebt, dass BENSONS Ansicht »vielleicht» richtig sein könne. Er hält *poppii* jedoch für eine eigene Art. Nun hätte die Konsequenz erfordert, dass er die betreffende Art der Fauna Finnlands wieder angeschlossen hätte. Dies hat er aber nicht getan, weshalb ich es hiermit tue.

Amaurenomatus carbonarius Hellén

Darüber, um welche Blattwespe es sich bei dieser Art in Wirklichkeit handelt, bin ich nicht ganz im Klaren, weil das Sägepräparat abhanden gekommen ist. Sie gleicht mehr oder weniger einigen anderen, grösstenteils schwarzen *Amauronematus*-Arten, weshalb eine nur auf äussere Merkmale basierende Bestimmung unzuverlässig sein kann.

HELLÉN erwähnt, dass ein in Pallastunturi von Kaisila erbeutetes und von mir als *carbonarius* bestimmtes ♀ zu *A. hyperboreus* Ths. gehöre. Ich habe die Säge dieses ♀ untersucht, wobei es sich herausstellte, dass die Zähne durch ihre liegende Lage und schmale Form von denen bei *hyperboreus* erheblich abwichen und diese Art somit nicht vertreten konnten. Ob das betreffende ♀ zu *carbonarius* gehört, wie ich es früher bestimmt hatte, weiss ich mit Sicherheit auch nicht, da ja das Sägepräparat dieser Art abhanden gekommen ist.

Amauronematus anthracinus Lindqvist

Diese Art wurde von BENSON (1962: 397) als vermutliches Synonym von *A. hyperboreus* Ths. erklärt, und demzufolge entfernte HELLÉN (1966:80) sie aus der Fauna Finnlands. Nun bespricht er sie aber als eine eigene Art, was voraussetzen würde, dass er *anthracinus* der finnischen Fauna wieder hätte anschliessen müssen. Dies hat er aber nicht getan, weshalb ich es hiermit tue.

Im Anschluss an *anthracinus* bespricht HELLÉN *A. macrophthalmus* Lqv., den BENSON (1962:397) als vermutliches Synonym von *hyperboreus*. Ths. hielt. HELLÉN tut aber den Schritt nicht halb, sondern entfernt *macrophthalmus* als sicheres Synonym aus der Fauna Finnlands und motiviert dies damit, dass die betreffende Art durch rote Flecke am Mesonotum und Schildchen von *anthracinus* abweicht. Gleichzeitig gibt er jedoch zu, dass diese Arten »sonst» miteinander übereinstimmen.

HELLÉN hat die beiden Arten flüchtig miteinander verglichen, denn auf den ersten Blick sicht man schon, dass es sich um verschiedene Arten handeln muss. *A. macrophthalmus* ist nämlich habituell eine plumpere Art, die Fühler sind deutlich kürzer und kräftiger, die Netzaugen grösser, und der längere Hintersporn erreicht die Mitte des Metatarsus. Die Beine und Pronotumecken des Typus sind fast einfarbig gelblich blassbraun. Die Zähne in und nach der Mitte der Säge sind höher und mehr dreieckig. Ich bin entschieden der Ansicht, dass *macrophthalmus* mit *anthracinus* nicht synonym ist, und daher schliesse ich ihn der Fauna Finnlands wieder an.

HELLÉN bespricht noch *A. varians* Lqv. und entfernt ihn aus der Fauna Finnlands. Mit dieser Massnahme kann ich auch nicht einverstanden sein. Gewohnheitsmässig berücksichtigt HELLÉN nur äussere Merkmale als wichtig, wenn er die Artberechtigung von *varians* beurteilt. Seiner Ansicht nach ist der Unterschied zwischen der Säge dieser Art und der von *anthracinus* nur »ganz unbedeutend». Dieser Unterschied (LINDQVIST 1962:119) ist meines Erachtens schon so bedeutend, dass man zu dem Schluss berechtigt ist, es müsse sich um verschiedene Arten handeln. Ausserdem besteht auch ein Unterschied zwischen den Penisvalven (LINDQVIST 1962:119). Den besten Unterschied repräsentieren die Fühler. Bei *varians* sind sie nämlich kürzer, kräftiger und schwach komprimiert und weichen somit deutlich von den längeren und typisch fadenförmigen Fühlern bei *anthracinus* ab.

Ich schliesse *varians* als eigene Art der Fauna Finnlands wieder an.

Amauronematus variator Ruthe

Im Zusammenhang mit dieser Art bespricht HELLÉN *A. longidens* Lqv. und erklärt ihn für synonym mit *variator*. In diesem Falle bin ich mit HELLÉNs Synonymisierung einverstanden. *A. variator* ist eine sehr variable Art, was HELLÉN auch erwähnt. Mein *longidens*-Typus war ein sehr kleines und dunkles Exemplar, wodurch ich irregeführt wurde.

Amauronematus dalecarlicus Malaise

Diese Art besprach ich (1940:67), und viele Jahre später zog ich (1962:126) sie als synonym mit *A. aeger* Knw ein. Nun ist HELLÉN der Ansicht, dass diese Blattwespen verschiedene Arten sind, und dass nur *dalecarlicus* in Finnland vorkommt, *aeger* aber nicht. Daher entfernte er (1971:83) *aeger* aus der Fauna Finnlands.

Ich habe die Typen beider Arten aufs neue untersucht, und bin zu dem Schluss gekommen, dass es sich nicht um verschiedene Arten handelt, bzw. dass meine alte Ansicht bestehen bleibt. Der Typus von *aeger* ist aus Mitteleuropa und der von *dalecarlicus* aus Mittelschweden. Wenn es sich um so variable Blattwespen wie die *Amauronematus*-Arten handelt, kann dieser Abstand in nord-südlicher Richtung geopraphisch bedingte Abweichungen im Aussehen schon hervorrufen. Bereits auf einem ziemlich beschränkten Gebiete lässt sich bei vielen Nematinen leicht feststellen, wie nicht nur die Färbung sondern sogar skulpturelle und plastische Merkmale variieren können. Die Grösse des Insekts beeinflusst manchmal die Kopfform und die Länge der Fühler, geschweige dann geringere Merkmale. Die Unterschiede, die Hellén zwischen *aeger* und *dalecarlicus* erwähnt, halte ich für Fälle aus der Variationsbreite der betreffenden Arten.

Ich habe die Säge sowohl des *aeger*-Typus als die des Typus von *dalecarlicus* untersucht. Dabei stellte sich heraus, dass die Sägen beider Typen vollkommen dasselbe Aussehen (Abb. 17) hatten. Besonders interessant ist in diesem Falle der Umstand, dass die Zähne ein Sonderaussehen haben, das bei keiner anderen mir bekannten *Amauronematus*-Art vorkommt, obgleich ich die Sägen von etwa 60 Arten kenne. Die Gleichheit der Sägen beider Typen ist das Hauptargument, weshalb ich *dalecarlicus* nicht als eigene Art anerkennen kann. — Die Penisvalve von *aeger* geht aus Abb. 9 hervor.

Es ist fraglich, ob das von Hellén beschriebene *aeger*-♂ diese Art wirklich vertritt. Er hat nämlich zwei meiner *aeger*-♂♂ falsch bestimmt. Das eine hat er als *A. schlueteri* Ensl. und das andere erst als *A. viduatinus* Mal. und einige Jahre später als *schlueteri* determiniert. Es ist nicht verwunderlich, dass Hellén *aeger* mit *schlueteri* verwechselt hat, denn die ♂♂ dieser Arten gleichen einander erheblich. Den sichersten Unterschied repräsentiert die Penisvalve, die bei *schlueteri* kräftige Dorne hat, während *aeger* ohne solche ist (Abb. 3 und 9). Das ♂ von *viduatinus* ist mir unbekannt. Diese Art kommt bei uns im nördlichsten Lappland vor, während meine *aeger*-♂♂ aus dem südlichsten Finnland sind.

Hellén entfernte *aeger* (1971:83) aus der Fauna Finnlands und ersetzte ihn mit *dalecarlicus* (1971:84). Ich entferne *dalecarlicus* und schliesse *aeger* der finnischen Fauna wieder an.

Amauronematus sempersolis Kiaer

Vor Jahren hatte ich aus dem Tromsø-Museum, Tromsø, Norwegen, das Material dieser Art zur Ansicht. Es umfasste fünf Blattwespen, die vier Arten vertraten, wie ich (1959:7) mitgeteilt habe. Also ein sehr heterogenes Material. Conde hat i.J. 1939 alle Exemplare bestimmt und dabei zwei ♀♀ als *Amauronematus aeger* Knw f. *sempersolis* determiniert. Unlängst erfuhr ich, dass ein drittes von Conde gleicherweise bestimmtes und zu demselben Material gehöriges ♀ in coll. Hellén, Helsingfors, sich befand. Das det.-Etikett dieses Exemplars hat Conde mit dem Vermerk »Type = *(hebes* Knw)» ergänzt. Somit wäre *sempersolis* gleichzeitig eine Form von *aeger* und identisch mit *hebes*, was unmöglich ist.

Nach Kiaer sollen bei *sempersolis* die Oberlippe ganz und die Tegulae mehr oder weniger weisslich und die Mesopleuren matt sein. Diese Merkmale deuten darauf hin, dass *sempersolis* mit *hebes* identisch sein könnte. Dieser Annahme widerspricht es jedoch dass bei *sempersolis* die Sägescheide nur doppelt so dick wie die Cerci und am Ende gerundet sein soll. Bei *hebes* ist aber die Sägescheide viermal so dick wie die Cerci und am Ende *Pristiphora*-artig ausgerandet. Dieser Unterschied allein schliesst die Möglichkeit aus, dass *hebes* mit *sempersolis* identisch sein könnte.

Was den von Conde ausgewählten

Typus betrifft, der seiner Ansicht nach mit *hebes* identisch sein soll, ist hervorzuheben, dass dieses Exemplar nicht den wahren *hebes* vertritt, sondern den von mir (1959:9) beschriebenen *A. tristis.* Die Sägescheide dieser Art und die matten Mesopleuren stimmen mit der Beschreibung Kiaers überein, wogegen die Oberlippe und die Tegulae immer ganz schwarz sind, was von der *sempersolis-*

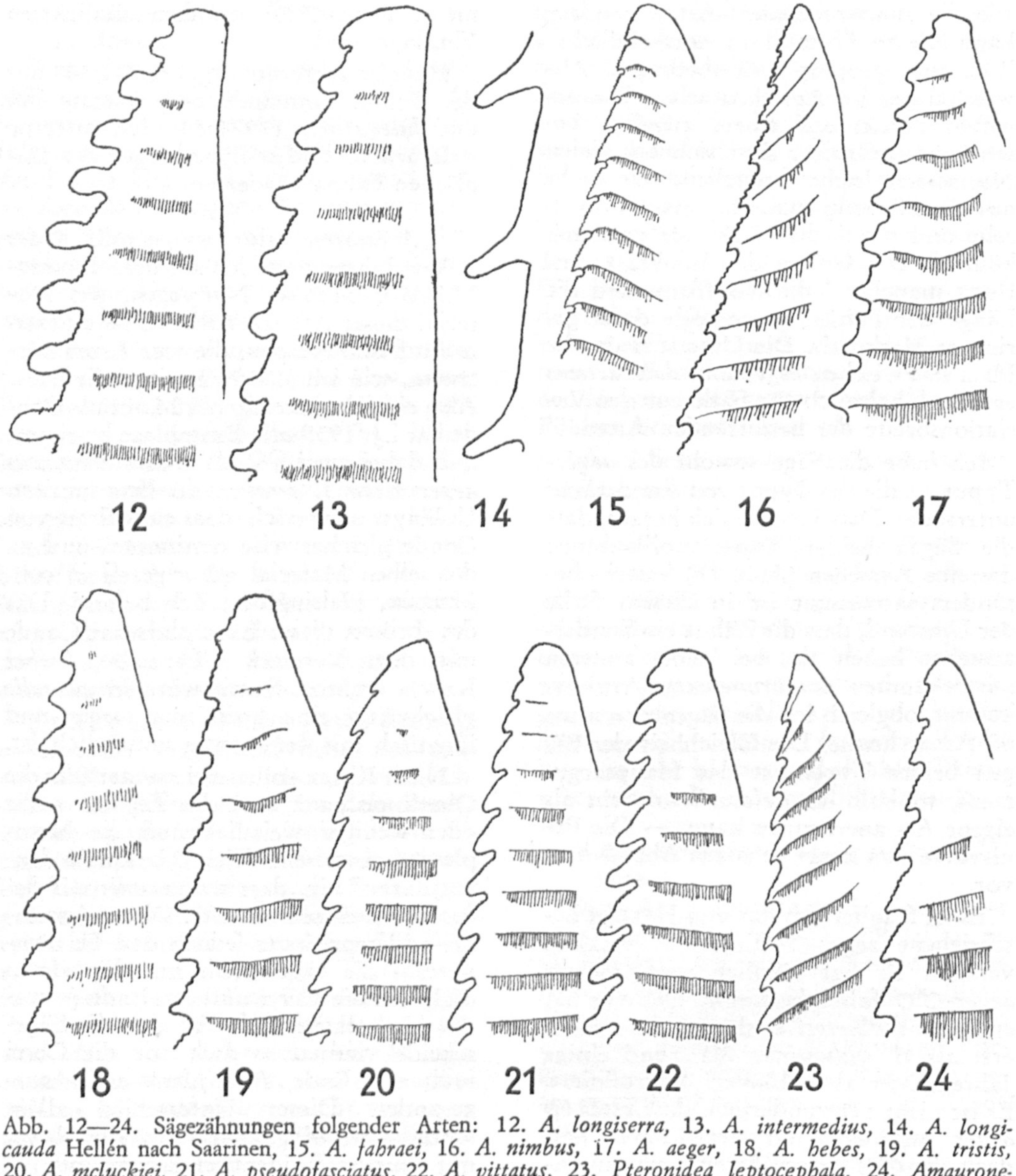

Abb. 12—24. Sägezähnungen folgender Arten: 12. *A. longiserra,* 13. *A. intermedius,* 14. *A. longicauda* Hellén nach Saarinen, 15. *A. fahraei,* 16. *A. nimbus,* 17. *A. aeger,* 18. *A. hebes,* 19. *A. tristis,* 20. *A. mcluckiei,* 21. *A. pseudofasciatus,* 22. *A. vittatus,* 23. *Pteronidea leptocephala,* 24. *Amauronematus reticulatus.*

Beschreibung abweicht. Der von Conde ausgewählte und als *hebes* aufgefasste Typus kann somit nicht als *sempersolis* anerkannt werden.

Ferner ist zu bemerken, dass *sempersolis* als keine Form von *aeger* angesehen werden kann, weil bei der letzteren Art die Mesopleuren so glänzend sind, dass sie keinesfalls als matt bezeichnet werden können, was sie nach Kiaer sein müssten.

Schliesslich weichen *hebes, tristis* und *aeger* durch ihre Sägezähnungen (Abb. 18, 19 und 17) so deutlich voneinander ab, dass es sich zweifelsohne um drei gut getrennte Arten handelt.

Welche Art in Wirklichkeit bei *sempersolis* in Frage steht, vermag ich zur Zeit unmöglich zu sagen. Immer mehr bin ich zu dem Schluss gekommen, dass Kiaers Material heterogen gewesen sein muss, und daher hat er Markmale zweier Arten in seine *sempersolis*-Beschreibung aufgenommen.

Um zu untersuchen, wie die beiden im Tromsø-Museum befindlichen *sempersolis*-Exemplare aussehen, habe ich dorthin geschrieben, um sie zur Ansicht zu erhalten. Die Wespen sind aber nicht angetroffen worden, was ich sehr bedaure, denn ohne sie ist es unmöglich, das *sempersolis*-Problem zu lösen. Somit lässt sich bis auf weiteres nur sagen, dass *sempersolis* vorläufig eine unaufgeklärte Art ist.

Als Hellén *sempersolis* besprach, verliess er sich allzuviel auf Condes Bestimmung des Typus von *sempersolis* und kam dadurch zu falschem Schluss betreffs dieser Art. Er synonymisierte *hebes* und *tristis* mit *sempersolis* und entfernte sie (1971:83) aus der Fauna Finnlands. Ich schliesse sie aber als eigene Arten dieser Fauna wieder an.

Amauronematus mcluckiei Benson

Als ich (1939:48) diese Art als neu für Finnland meldete, handelte es sich um einige von Conde unter dem Namen *A. puniceus* Christ f. *mcluckiei* Bens. bestimmte Exemplare. Diese Namenkombination, die somit nicht von mir stammt, ist unberechtigt, denn mit *puniceus* hat *mcluckiei* nichts zu tun.

Vor Jahren erhielt ich von Benson je ein ♂ und ♀ seiner Art *mcluckiei.* Von der Säge und den Penisvalven machte ich Präparate und stellte dabei fest, dass diese Art mir aus Finnland nicht bekannt war. Als ich unlängst nach einer vieljährigen Zwischenzeit die Präparate aufs neue ansah, kam die Säge mir bekannt vor, und so stellte sich heraus, dass sie dasselbe Aussehen wie die Säge des von mir (1962:10 Abb. 4) beschriebenen *A. pustulatus* hatte, und dass es sich um identische Arten handelte. Ich ziehe daher *pustulatus* als synonym mit *mcluckiei* ein.

A. mcluckiei wurde von Benson (1958:185) als synonym mit *A. arcticola* Ensl. eingezogen. Diese Synonymisierung ist unrichtig und desgleichen die mit *arcticola* Enslin Lindqvist. *A. mcluckiei* ist eine gute, eigene Art. Sägezähnung und Penisvalve gehen aus den Abb. 20 und 10 hervor.

Amauronematus vittatus Lepeletier

Im Zusammenhang mit dieser Blattwespe bespricht Hellén die *Amauronematus*-Arten *pustulatus* Lqv., *nylundi* und *pseudofasciatus* Lqv. und synonymisiert sie mit *vittatus.*

Wie ich oben bei *mcluckiei* dargelegt habe, ist *pustulatus* mit dieser Art synonym. Aus den Sägeabbildungen (Abb. 20 und 22) geht hervor, dass *pustulatus* (= mcluckiei) mit *vittatus* nicht synonym sein kann, da es sich um zwei gut getrennte Arten handelt. Hellén hat *pustulatus/mcluckiei* zu schlecht gekannt.

Was *nylundi* betrifft, nehme ich Bezug auf meinen (1969:232) Aufsatz, wo ich ihre Artberechtigung ausführlich bespreche, weshalb es sich erübrigt, das

Gleiche bei dieser Gelegenheit zu wiederholen.

Was *pseudofasciatus* betrifft, hebt Hellén hervor, dass der Holotypus *vittatus* angehöre, und dass die weisslichen Bänder der Tergite durch Ausziehen des Hinterleibs entstanden seien. Hierzu kann ich erwidern, dass sie sich dort schon befanden, bevor ich das Sägepräparat angefertigt hatte, und dass ich eben deshalb den Artnamen *pseudofasciatus* wählte. Die betreffende Art und *vittatus* unterscheiden sich zuvörderst darin, dass die Sägezähne (Abb. 21 und 22) und Penisvalven (Lindqvist 1969:243 Abb. 23 und 25) voneinander dermassen deutlich abweichen, dass die Arten unschwer voneinander getrennt werden können.

Hellén bespricht noch *A. tillbergi* Mal. Diese Art habe ich (1972:71) kürzlich geklärt, worauf ich bei dieser Gelegenheit nur Bezug nehme, um Wiederholungen zu vermeiden.

Die von Hellén mit *vittatus* unrichtig synonymisierten *pustulatus/mcluckiei, nylundi* und *pseudofasciatus* wurden von ihm aus der Fauna Finnlands gestrichen. Ich schliesse sie aber als eigene Arten dieser Fauna wieder an.

Amauronematus tunicatus Zaddach

Im Zusammenhang mit dieser Blattwespe bespricht Hellén die *Amauronematus*-Arten *sollemnis* Knw und *atratus* Lqv. Dabei behauptet er, mein Allotypus-♂ von *sollemnis* sei ein kleines Stück von *A. fallax* Lep. v. *histrio*. Wie er diesen Schluss ziehen kann, verstehe ich nicht, denn dermassen verschieden sind schon die Färbungen dieser Blattwespen. Die Penisvalven weichen gleichfalls so deutlich voneinander ab (Abb. 11 und 3), dass mein *sollemnis*-♂ keinenfalls das von *histrio* sein kann.

Hellén (1971:83) entfernte *sollemnis* aus der Fauna Finnlands. Ich schliesse ihn aber dieser Fauna wieder an.

Bezüglich eines von mir bestimmten *atratus*-Exemplars (Oulunkylä, Saarinen) behauptet Hellén, dass es ein kleines Exemplar von *tunicatus* mit ganz schwarzem Hinterleib zu sein »scheint», und dass die Sägezähne denen von *tunicatus* ähnlich seien. Ich habe beides kontrolliert und kann versichern, dass die Anmerkungen unbegründet sind. Hellén (1971:83) entfernte *atratus* aus der Fauna Finnlands, ich schliesse ihn aber dieser Fauna wieder an.

Amauronematus polaris Holmgren

Im Zusammenhang mit dieser Art bespricht Hellén auch *Amauronematus leucopyga* Lqv., *Pteronidea parviserrata* Lqv. und *P. sordidiapex* Lqv. Diese Arten wurden von Benson (1961:190) mit *A. polaris* Holmgr. synonymisiert, und diese Synonymisierung akzeptiert Hellén vorbehaltslos, obgleich ich (1967: 118—119) mit Abbildungen zeigte, wie die Sägen und Penisvalven voneinander abweichen. Man kann die betreffenden drei Arten unmöglich identisch bezeichnen, was sie jedoch sein müssten, um synonym mit einer und derselben vierten Art sein zu können. Da ich die Artberechtigung der obigen drei Arten früher kommentiert habe (Lindqvist 1967:117), nehme ich bei dieser Gelegenheit nur darauf Bezug und bespreche sie nicht näher. Hellén entfernte *leucopyga* und *parviserrata* (1966:80) und *sordidiapex* (1971:83) aus der Fauna Finnlands, aber ich schliesse sie dieser Fauna wieder an.

Amauronematus reticulatus Holmgren

Im Anschluss an diese Art werden von Hellén viele voneinander mehr oder weniger abweichende Arten erwähnt. Es handelt sich hierbei fast ausnahmslos um lappländische Blattwespen, von denen meistens nur ein kleines Material vorliegt. Diese Arten bzw. ihre Variabilität ist nur mangelhaft bekannt, und da die Arten einander erheblich gleichen können, ist es verständlich, dass sie ohne

Säge- oder Penisvalvenpräparat leicht falsch bestimmt werden, und abweichende Ansichten hinsichtlich der Abgrenzung der Arten bzw. ihrer Artberechtigung veranlassen können. Hierbei ist auch zu berücksichtigen, dass die Nematinen-Fauna Lapplands noch zahlreiche unbeschriebene Arten umfasst, die als bekannte Arten leicht falsch gedeutet werden können. Die Artberechtigung der meisten von Hellén erwähnten Arten habe ich (1967:16—18 und 117—119) früher besprochen, weshalb ich, um Wiederholungen zu vermeiden, diese Angelegenheit bei dieser Gelegenheit nicht weiter berühre, sondern auf sie nur Bezug nehme.

Pteronidea leptocephala Thomson

Eingangs muss ich hervorheben, dass es mir unverständlich ist, warum Hellén *leptocephala* für einen *Amauronematus* hält. Durch den schlanken Habitus und die langen, dünnen Fühler erhält die Art ein unverkennbar *Pteronidea*-artiges Aussehen, und durch den kurzen Scheitel der Imagines sowie die Färbung der Larve und ihre spitzen, kegelartigen Cerci erweist sich dass *leptocephala* der Art *P. bergmanni* Dahlb. am nächsten steht. Weiter gleichen die Sägen von *leptocephala* und *bergmanni* einander dermassen, das sie als arttrennende Merkmale kaum ausgenutzt werden können. Hellén erwähnt, dass die Sägezähnung der von *A. reticulatus* Holmgr. gleiche. In diesem Falle sollte man meiner Ansicht nach jedoch viel eher von Ungleichheit als von Gleichheit sprechen (Abb. 23 und 24). Über all dies und noch mehr dazu habe ich (1960:15—18) kürzlich berichtet.

Hellén behauptet, dass meine (1960: 16) Beschreibung des ♂ sich auf eine andere Art beziehen könne. Ich versichere, dass meine ♂♂ nicht falsch bestimmt worden sind, denn schon vor Jahren gelang es mir, in Lappland auf einem kleinen Biotop zahlreiche ♂♂ und ♀♀ von *leptocephala* zu erbeuten. Ich gebe zu, dass meine Beschreibung der Mesopleuren »nahezu matt» nicht zutreffend ist, denn sie sind mehr glänzend als matt. Wie mir dieser lapsus unterlaufen ist, kann ich nicht erklären.

Zum Schluss hebe ich hervor, dass *leptocephala* habituell eine der typischesten *Pteronidea*-Arten ist.

Amauronematus viduatus Zetterstedt

Im Anschluss an diese Art bespricht Hellén *A. viduatoides* Lqv. und erwähnt dabei, dass die von ihm gesehenen *viduatus*-Exemplare eine Säge gehabt haben, die etwa wie meine Abbildungen (1945:105 Abb. 2 und 1959:128 Abb.1) von *viduatus* und *viduatoides* aussah. Weiter hebt er hervor, dass er die schmälere und stärker gebogene Säge, wie Benson (1958:183 Abb. 529) und ich (1959: 128 Abb. 2) abgebildet haben, nicht gesehen hat. Hierzu kann ich nur sagen, dass er guten Bescheid darüber gibt, wie schwach seine Kenntnis der betreffenden Art bzw. ihrer Säge ist. Entweder hat er seine *viduatus*-Exemplare falsch bestimmt, oder so hat er sich nur damit begnügt, aus der Sägescheide herausragende Sägespitzen bei zu schwacher Vergrösserung anzusehen. Vollständig herauspräpariert sieht die Säge von *viduatus* immer so aus, wie Benson und ich sie abgebildet haben.

Hellén erwähnt noch, dass Zahl und Form der Zähne variabel seien. Dieser Äusserung kann ich keinen Glauben schenken. Ich bedaure, dass er seine Ansicht auf keine konkrete Weise erläutert. Um die Variabilität der Zähnung bei den Arten der *viduatus*-Gruppe zu ermitteln, müssten gute Präparate bei starker Vergrösserung untersucht werden, und ich bin davon überzeugt, dass Hellén das nicht getan hat.

An äusseren Merkmalen können *viduatus* und *viduatoides* miteinander leicht verwechselt werden. Untersucht man aber die Sägen, ist eine Verwechslung ausgeschlossen, den dermassen deutlich weichen sie voneinander ab (LINDQVIST 1959:128 Abb. 1 und 2) und erfordern keine nähere Erläuterung.

Von BENSON (1962:402) wurde *viduatoides* als synonym mit *viduatus* erklärt und von HELLÉN (1966:80) aus der Fauna Finnlands entfernt. Ich schliesse aber *viduatoides* als eigene Art der finnischen Fauna wieder an.

Im Zusammenhang mit *viduatus* bespricht HELLÉN auch *A. branderi* Lqv. und erwähnt dabei, dass ein von mir bestimmtes ♀ »weder im Körperbau noch koloristisch» von *viduatus* abweicht. Dies ist eine richtige Beobachtung, die ich in der Artbeschreibung (1969:232) auch hervorgehoben habe. HELLÉN bemerkt noch, dass die von mir (1969:234 Abb. 1) abgebildeten Zähne zu stark vortretend seien, während sie denen von *viduatus* gleichen müssten. Hierzu erwidere ich, dass die Sägezähne aller Arten der *viduatus*-Gruppe ein sehr gleichartiges Aussehen haben, weshalb es zwecklos ist, ihre Form anzusehen. Es sind die Form der Säge und die Zahl der Zähne, die bei der Artbestimmung berücksichtigt werden sollen. Dabei tritt unzweideutig hervor, dass *viduatus* und *branderi* keinesfalls identische Arten sein können, welcher Ansicht HELLÉN war. Er synonymisierte *branderi* mit *viduatus* und entfernte ihn aus der Fauna Finnlands. Ich schliesse aber *branderi* als eigene Art der finnischen Fauna wieder an.

Amauronematus leucolaenus Zaddach

In seiner Beschreibung dieser Art erwähnt HELLÉN, dass die Sägezähnung sowohl betreffs der Form wie der Zahl der Zähne variabel sei. Dabei nimmt er Bezug auf meine (1945:105 Abb. 3 und 1967:123 Abb. 29) Bilder. Um Variabilität der Zahnform feststellen zu können, ist die erstere Abbildung ganz ungeeignet, da sie in zu kleinem Masstab gezeichnet worden ist, was HELLÉN einsehen müsste. Nichtsdestoweniger geht aus ihr hervor, dass die Zahl der Zähne neun ist, d.h. dieselbe wie in der Abb. 29, wo die Zähne sehr deutlich sind. Aus dieser Abbildung allein können aber keine Schlüsse betreffs Variabilität gezogen werden. Dagegen ist es leicht, verschiedenerlei Fälle von »Variabilität» festzustellen, falls man sich damit begnügt, aus der Sägescheide herausragende Sägen anzusehen.

Im Zusammenhang mit *leucolaenus* bespricht HELLÉN *Amauronematus saarineni* Lqv., der von BENSON (1962:402) mit *leucolaenus* synonymisiert wurde. Diese Synonymisierung wurde von HELLÉN einwandfrei anerkannt, und (1971: 83) *saarineni* aus der Fauna Finnlands entfernt. Er nimmt Bezug auf meine (1967:121) *saarineni*-Beschreibung, wo ich erwähne, dass die Sägezähne kleiner und näher der Spitze gelegen sein sollen. Dies geht aus den Abbildungen (1967:123 Abb. 28 und 29) unzweideutig hervor. HELLÉN erwähnt noch, dass er von mir einen *saarineni* erhalten hat, dessen Sägezähne meinem Bilde (1945:105 Abb. 3) von *leucolaenus* ähnlich seien. Dieses Bild ist, wie ich schon oben angeführt habe, für das Studium der Sägezähne ganz ungeeignet. Warum hat HELLÉN nicht auf die Abbildung (1967:123 Abb. 29) Bezug genommen?

Die Sägezähnungen von *leucolaenus* und *saarineni* sind derart voneinander abweichend, dass es sich zweifellos um verschiedene Arten handelt. Ich schliesse *saarineni* als eigene Art der Fauna Finnlands wieder an.

Schlussworte

Wie ich in der Einleitung erwähnt habe, sind nach HELLÉN 92 *Amauronematus*-Arten aus Finnland angeführt worden. Durch seine Bearbeitung der betreffenden Gattung kam er zu dem Schluss, dass der wirkliche Artbestand nur 45 Spezies umfasste, wodurch 47 Arten als falsch bestimmt oder als Synonyme gestrichen worden sind. Diese kräftige Reduzierung ist in mehreren Fällen berechtigt gewesen, aber nicht in allen. Oben habe ich nämlich 24 Spezies als eigene Arten wieder aufgestellt und der Fauna Finnlands angeschlossen. Dabei handelt es sich teils um von BENSON ohne irgendwelche Kommentare synonymisierte Arten, die HELLÉN fast ausnahmslos als richtig anerkannt hat, und teils um solche Arten, die HELLÉN synonymisiert hat. Durch meinen Zuschuss von 24 Arten steigt die jetzige Zahl der *Amauronematus*-Arten auf 69.

Es kann merkwürdig erscheinen, dass ich bei nicht weniger als 24 Arten bezüglich der Artberechtigung anderer Ansicht bin als HELLÉN. Dies kommt daher dass ich den Sägen und Penisvalven mehr taxonomische Bedeutung beilege als er. Diese Körperteile, die er unterschätzt, sind überhaupt sehr konstant und können sogar bei Arten, die einander äusserlich erheblich gleichen, ganz verschieden aussehen. Sie verdienen daher immer untersucht zu werden. Leider spielen aber für HELLÉN die äusseren Merkmale die Hauptrolle, trotzdem sie sehr variabel sein können, während Sägen und Penisvalven zu wenig berücksichtigt werden. Die ♀♀ der *Amauronematus*-Arten sind meistens unschwer an ihren äusseren Merkmalen zu erkennen, aber wenn es sich um ♂♂ handelt, verhält es sich ganz anders.

Bei dieser Gelegenheit kann ich nicht unterlassen, das Bedauerliche darin hervorzuheben, dass BENSON seine Synonymisierungen fast ausnahmslos mit keinem einzigen Worte kommentiert oder motiviert hat. Eine Art zu synonymisieren, ist keine Bagatelle. Sie kann mit der Beschreibung einer neuen Art verglichen und gleichwertig angesehen werden. Im letzteren Falle wird die Fauna mit einer Art bereichert, im ersteren Falle aber reduziert. Beide Fälle sind gleich wichtig, weshalb bei Synonymisierungen auch konkrete Argumente angeführt werden sollen.

Literatur

BENSON, R. B. 1958: Handbooks for the Identification of British Insects, Hymenoptera Symphyta. VI 2(c). — R. Entomol. Soc. London 6:139—252.

—»— 1961: The Sawflies (Hymenoptera Symphyta) of the Swiss National Park and surrounding Area. — Ergebn. wiss. Unters. schweiz. Nationalparks 7:161—195.

—»— 1962: Holarctic Sawflies (Hymenoptera Symphyta). — Bull. British Museum (Nat. Hist.). Entomology 12/8:379—409.

CONDE, O. 1938: Ostbaltische Tenthredinoidea IV. — Notulae Entomol. 18:10—20.

HELLÉN, W. 1966: Verzeichnis der in den Jahren 1961—1965 für die Fauna Finnlands neuhinzugekommenen Insektenarten. — Notulae Entomol. 46:65—86.

—»— 1970: Die Nematinen Finnlands II (Hym., Tenthredinidae). — Notulae Entomol. 50: 1—37.

—»— 1971: Verzeichnis der in den Jahren 1966—1970 für die Fauna Finnlands neuhinzugekommenen Insektenarten. — Notulae Entomol. 51:73—91.

LINDQVIST, E. 1938: Nio för Finlands fauna nya nematiner. — Notulae Entomol. 18:82.

—»— 1939: Nio för vår fauna tidigare okända tenthredinidformer. — Notulae Entomol. 19—48.

—»— 1940: Zur Kenntnis einiger Amauronematus-Arten (Hym. Tenthr.). — Notulae Entomol. 20:56—71.

—»— 1945: Über Blattwespen der Amauronematus-Gruppe. — Notulae Entomol. 25: 102—108.

—»— 1959a: Über einige neue oder wenig bekannte Amauronematus-Arten (Hym., Tenthr.). — Notulae Entomol. 39:1—15.

—»— 1959b: Drei neue Amauronematus-Arten (Hym., Tenthr.). — Notulae Entomol. 39: 127—130.

—»— 1960: Zur Kenntnis finnischer Pteronidea-Arten (Hym., Tenthr.). — Acta Soc. Fauna Flora Fennica 76(2):1—29.

—»— 1961: Zur Kenntnis einiger Blattwespen (Hym., Tenthr.). — Notulae Entomol. 41: 8—15.

—»— 1962: Bemerkungen über paläarktische Blattwespen (Hym., Symph.). — Notulae Entomol. 42:105—127.

—»— 1967a: Revision einiger von A. E. Holmgren beschriebenen Blattwespen (Hymen-

optera Tenthredinidae) aus Novaja Semlja. — Notulae Entomol. 47:15—21.

—»— 1967b: Über Blattwespen-Synonyme (Hymenoptera Symphyta). — Notulae Entomol. 47:117—126.

—»— 1969: Neue Nematinen aus Finnland II. (Hymenoptera Tenthredinidae). — Notulae Entomol. 49:231—246.

LORENZ, H. & KRAUS, M. 1957: Die Larvalsystematik der Blattwespen. — Akademie-Verlag — 339 S. Berlin.

ZIRNGIEBL, L. 1953: Tenthredinoiden aus der Zoologischen Staatssamlung in München. — Mitt. Münchener Entomol.Ges. 43:234—238.

Litteratur

WIGGLESWORTH, V. B. 1972: The principles of insect physiology. Chapman & Hall. London. Sjunde upplagan, 827 sidor, 412 textfigurer. Pris 7.50 Pund.

V. B. WIGGLESWORTH, prof. eremitus vid universitetet i Cambridge, har under flera decennier varit den ledande insektfysiologen i Europa och har haft möjlighet att följa med utvecklingen i det vidsträckta gebit insektfysiologin omspänner. Här som på flera andra gebit inom biologin föråldras läroböcker i rätt snabb takt och nya upplagor måste utges relativt ofta. Föreliggande verk strävar att täcka alla viktigare områden inom insektfysiologin och inkluderar här även ontogeni och etologi. Den första upplagan utkom 1939 och i de fem följande insattes nytt material i form av addenda. Den sjätte upplagan innehöll en grundlig revision av hela texten varför författaren åter nöjt sig med att i den föreliggande sjunde upplagan införa addenda efter varje kapitel, såsom han i företalet säger, av sparsamhetsskäl. I slutet av varje kapitel finnes separata litteraturförteckningar, en ursprunglig och tre »supplementary references». Detta har kanske sparat ombrytningskostnader, men överskådligheten lider därav. Dock finnes i slutet av boken ett auktorregister, som något hjälper upp detta. I sin helhet är boken utmärkt för den som vill sätta sig grundligare in i insektfysiologi och de rikligt förekommande referenserna till litteraturen, flera hundra i varje kapitel öppnar vägen för vidare litteraturstudier.

Walter Hackman

Notulae Entomologicae LIII: 59—60, 1973

Gerris sphagnetorum Gaunitz (Heteroptera, Gerridae) in Finland

Kari Vepsäläinen

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Abstract

Gerris sphagnetorum Gaunitz finds are reported from 4 localities in western Finland. As the places are located between 60 and 65.5° N. lat., and there are previous records from Sweden and Poland, the species may be supposed to be much more widely distributed than was earlier realized. Its rare and sporadic occurrence may be attributable to its special habitat, *Sphagnum* pools in different bogs.

In connection with a genetic and ecological study ca. 32000 *Gerris* imagines were collected by myself and friends, in 1965—72 in Finland. Among these water-striders were 7 individuals of *Gerris sphagnetorum,* a species previously unknown from Finland. The finds are listed below. For each locality the respective coordinates in the Finnish uniform grid system *(vide* Ann. Ent. Fenn. 37:1a) are given.

1. *Al:* Finström, Emkarby, Västerfjärden (670: 10) 19.V.1969 1 ♂ 1♀, both apterous (leg. Olli Paasivirta). Habitat: Ditch, breadth 2 m, length 300 m; between a seashore marsh and a cultivated field. Sparse vegetation in ditch. Other *Gerris* species: *G. odontogaster* 43 exx, *G. argentatus* 85 exx, *G. lacustris* 114 exx.
2. *Oa:* Perho, Heikinjärvenneva (702:38) 28.V. 1972 1♀, apterous (leg. Heikki Henttonen, Olli Järvinen & Irma-Riitta Simonsuuri). Habitat: A shallow pond, ca. 10×200 m, in an open *neva* bog with *Sphagnum* spp. and *Chamaedaphne calyculata.* Other *Gerris* species: *G. odontogaster* 11 exx.
3. *Ob:* Haukipudas, Kello, Himottuoja (722:42) 2.VI.1968 2♂ 1♀, all apterous(leg. Risto Väisänen). Habitat: Ditch between the road and fields, leading from a *Sphagnum* pond in the nearby woods. Other *Gerris* species: *G. odontogaster* 7 exx, *G. lateralis* 9 exx, *G. lacustris* 37 exx, *G. rufoscutellatus* 2 exx.
4. *Ob:* Ii, Hamina (724:42) 29.V.1963 1♀, apterous (leg. Juha Viramo; in the collections of the University of Oulu). Habitat: ditch.

Gerris sphagnetorum was long known only from Sweden, where the species was described by Gaunitz (1947). It is said always to be a denizen of *Sphagnum* waters. In 1964 the first specimen of *G. sphagnetorum* (an apterous ♂) was captured in Poland during collecting in *Sphagnum* pools in several peat bogs (Mielewczyk 1968). New Polish finds are given by Biesiadka (1969) and Mielewczyk (1971).

It seems that *G. sphagnetorum* may have a much wider distribution than was previously realized. Owing to its sporadic occurrence — which is at least partly due to the peculiar habitat of the species — and to its scarcity, *G. sphagnetorum* may be overlooked in many areas where it does actually exist.

Acknowledgments.

The collection and determination of the present material was supported by grants from the Heikki and Hilma Honkanen Foundation and Societas Entomologica Helsingforsiensis.

References

BIESIADKA, E. 1969: Pluskwiaki wodne (Heteroptera) okolic Miedzychodu i Sierakowa. — Bull. Entom. Pologne 39:385—400.

GAUNITZ, D. 1947: Gerris sphagnetorum n. sp. (Heteropt.). — Opuscula entom. 12:34.

MIELEWCZYK, S. 1968: Nowy dla fauny Polski gatunek nartnika, Gerris sphagnetorum Gaun. (Heteroptera, Gerridae). — Bull. Entom. Pologne 38:29—31.

—»— 1971: Uzupelnienie znajomosci fauny pluskwiakow (Heteroptera) wod okolic Gniezna. — Badania Fizjogr. Polska Zahodnia 24 (B — Biologia):75—81.

Litteratur

CHVALA, MILAN & LYNEBORG, LEIF & MOUCHA, JOSEF 1972: The Horse Flies of Europe (Diptera, Tabanidae). Entomologiska Föreningen i Köpenhamn. 499 sidor, 164 textfigurer, 8 plancher (5 i färg).

Boken är en uttömmande monografi med huvudvikten på det taxonomiska och ett synnerligen lyckat resultat av sammarbete mellan kända specialister på Tabanidae, hästflugor. Det är ett stort arbete innefattande revisioner av museimaterial som ligger bakom texten i detta arbete och samtliga avbildningar är originala. Tabaniderna är en relativt artrik familj, i Europa företrädd av 176 arter och många arter är på grund av variabilitet svåra att känna. Synymifrågor har också vållat specialisterna en hel del huvudbry i släktet *Hybomitra.* I början av arbetet finner man en utbredningstabell som visar från vilka europeiska länder arterna är kända. Jämför man arterna i kolumnen för Finland med J. KARVONENS förteckning över finländska tabanider från år 1969 i denna tidskrift så finner man följande nomenklatoriska förändringar: *Chrysops viduatus* Fabricius (= *C. pictus* Meigen), *Hybomitra borealis* Fabritius (= *H. lapponica* Wahlberg), *H. kaurii* Chvála & Moucha (= *H. borealis* auctt.), *H. ciureai* Séguy (= *schineri* Lyneborg) samt den i denna tidskrift tidigare publicerade förändringen *Hybomitra nitidifrons confiformis* Chvála & Moucha (= *conformis* Frey). För bestämning av tabanider fyller boken alla krav genom klara lätt använda bestämningstabeller, noggrann beskrivning av varje art samt avbildningar av pannan hos vardera könet, antenner och palper. Vingbilderna på planscherna är även till stor hjälp då det gäller *Chrysops-* och *Haematopota*-arter. Korta uppgifter om biologi och fenologi ges även för varje art. En lång litteraturförteckning och ett index över de vetenskapliga namnen förhöjer ytterligare arbetets värde. Boken fyller en avsevärd lucka i bestämningslitteraturen över parasitologiskt viktiga flugor. Arbetet är redigt disponerat och bildmaterialet högklassigt.

Walter Hackman

Notulae Entomologicae LIII: 61—62, 1973

Agramma (Agramma) alticeps sp. n. (Heteroptera, Tingidae)

Eduard Wagner

(Moorreye 103, D-2000 Hamburg 62)

Gestalt verhältnismässig breit, das ♂ 2,4—2,5 x, das ♀ 2,3—2,4 x so lang wie die Pronotumbreite (Abb. 1 a+b). Schwarz, Halbdecken dunkel graugelb. Kopf gewölbt, von vorn gesehen (Abb. 1 d+e) auffallend hoch, über den Augen stark gewölbt. Wangenplatten schwarz, gleichfalls auffallend hoch. Scheitel beim ♂ 2,4—2,5 x, beim ♀ 2,6—2,8 x so breit wie das flache Auge. Seitlich gesehen (Abb. 1 g+h) ist der Kopf viel höher als lang und die Wangenplatten sind unten gerundet. Fühler (Abb. 1 k+l) schwarz, schlank, das 3. Glied gelb und etwa doppelt so lang wie das 1. und 2. zusammen; 1. und 2. Glied kurz, jedes von ihnen etwas weniger als halb so lang wie die Scheitelbreite; 4. Glied beim ♂ 0,40—0,45x, beim ♀ 0,5 x so lang wie das 3. Glied. Augen den Vorderrand des Pronotum berührend. Pronotum am Vorderrand etwas breiter als der Kopf samt Augen (Abb. 1 a+b), schwarz. Halsring am Vorderrand hell. Scheibe des Pronotum stark gewölbt, mit feinem, aber deutlichem Mittelkiel. Scutellarfortsatz des Pronotum hell, ebenfalls mit einem Mittelkiel, Halbdecken hell, Randfeld schmal, mit einer Maschenreihe. Im übrigen ist das Corium durch mehr oder weniger deutliche Adern in Innenfeld, Mittelfeld und Seitenfeld eingeteilt. Membranteil mit etwas grösseren Maschen.

Unterseite schwarz. Beine schwarz, Schienen mit Ausnahme der Enden gelb. Rostrum schwarz, fast die Hinterhüften erreichend.

Genitalsegment des ♂ (Abb 1 n) abgerundet trapezförmig. Genitalöffnung gross. Parameren (Abb. 1 o) gekrümmt, Basalteil verhältnismässig klein.

Länge: ♂ = 2,04—2,2 mm, ♀ = 2,20—2,35 mm. *A. alticeps* sp.n. ist vermutlich bisher oft mit *A. globiceps* Horv. verwechselt worden. Diese Art (Abb. 1 c) ist jedoch viel schlanker, das bisher allein bekannte makroptere ♀ 3,5 x so lang wie die Pronotumbreite. Ausserdem sind bei ihr Fühler und Beine hell gefärbt. Diese Art gehört daher in die Untergattung *Paraserenthia* E.Wagn.

Der Kopf ist gleichfalls stark gewölbt (Abb. 1 f+i). Der Scheitel ist etwa 4,4 x so breit wie das flache Auge. Die Fühler sind hellgelbbraun, das 1. und 2. Glied sind kurz und jedes nur halb so lang wie die Scheitelbreite; 3. Glied 1,6 x so lang wie das 1.+2. zusammen und nur wenig länger als die Kopfbreite (bei Horvath falsch angegeben) und kaum mehr als doppelt so lang wie das 4. Glied. Kopf hinter den Augen kurz gestielt. Pronotum am Vorderrand kaum schmaler als der Kopf samt Augen, schwarz. Halskragen zum grossen Teil hell. Fläche des Pronotum gewölbt, mit schwachem Mittelkiel. Scutellarfortsatz hell gelblich, ebenfalls mit schwachen Mittelkiel. Halbdecken hell, lang und schmal, das Randfeld breit, mit einer Reihe grösserer Maschen. Letztere im Membranteil gross. Beine hell. Länge: ♀ makr. = 1.75 mm.

Durch das liebenswürdige Entgegenkomen von Herrn M. Meinander konnte die Type dieser Art untersucht werden. Sie befindet sich in der Sammlung Reuter im Zoologischen Museum Helsingfors und trägt die folgenden Etiketten: 1. ein weisser Zettel mit der Angabe »Jaffa»; 2. ein gleicher mit »J. Sahlbg.»; 3. die Nummer 583; 4. ein Zettel mit der gedruckten Angabe »spec.typ.»; 5. ein gelber Zettel (ohne Angabe); 6. handschriftlich »Serenthia globiceps Horv.»; 7. der in der Sammlung Reuter übliche graue Typenzettel mit der Nummer 9613.

Obgleich die hier besprochenen beiden Arten sehr verschieden sind und sogar verschiedenen Untergattungen angehören, stimmen sie doch in folgenden Merkmalen überein: Der Kopf ist über den Augen stark gewölbt und das Pronotum hat auf der Scheibe und auf dem Scutellarfortsatz einen deutlichen Mittelkiel.

Andererseits unterscheidet sich *A. alticeps* sp.n. von allen übrigen Arten durch die robuste, breite Gestalt und die Adern im Corium, so dass die Aufstellung einer neuen Untergattung in Betracht gezogen werden könnte.

Material: 8 ♂♂ und 9 ♀ aus Israel: Negev-Wüste, 10 km ö von Dimona, 10. 5. 72, leg. H. Eckerlein. Die Art lebt an *Anabasis articulata* Forsk. Holotypus und Paratypoide in meiner Sammlung, Paratypoide auch in der Sammlung von H. Eckerlein.

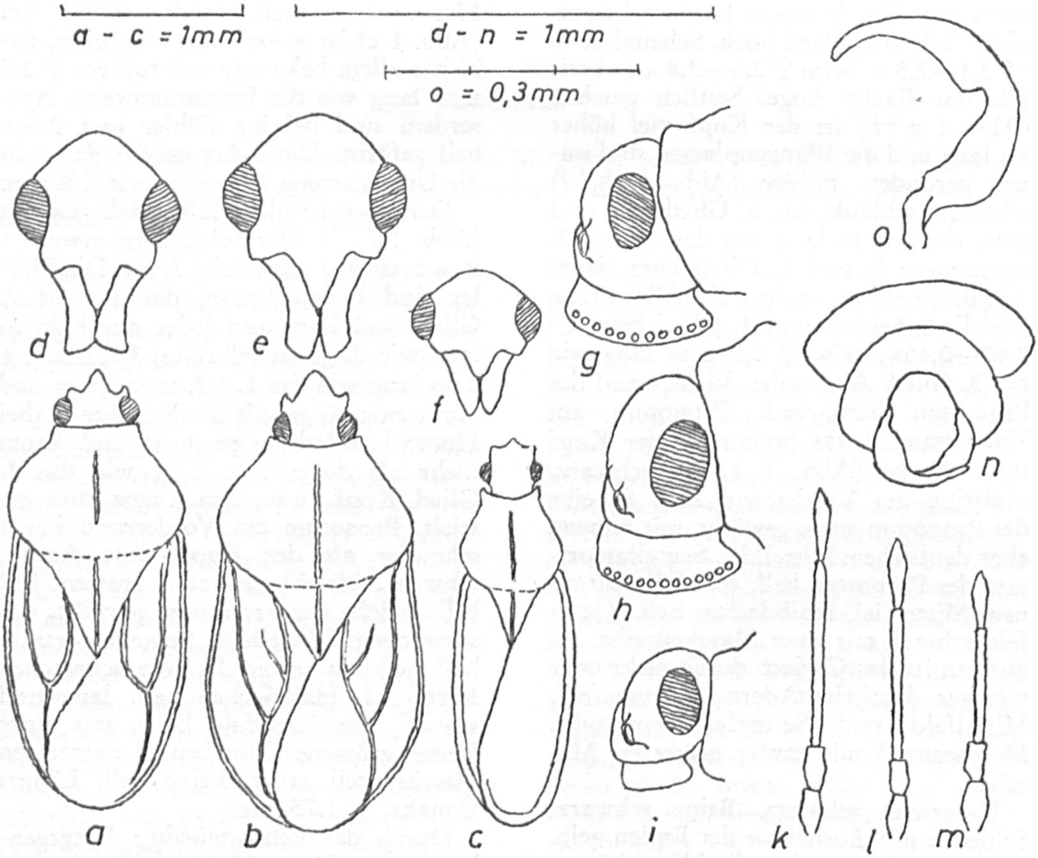

Abb. 1. *Agramma* Stephens. a, d, g, k, n, o = *A. alticeps* sp.n. ♂, b, e, h, l = id., ♀, c, f, i, m = *A. globiceps* Horv., ♀. — a—c = Gestalt, d—f = Kopf von vorn, g—i = Kopf von links, k—m = Fühler, n = Genitalsegment von oben, o = Paramer von oben.

Notulae Entomologicae LIII: 63—64, 1973

Das bisher unbekannte Männchen von Atractotomus schmiedeknechti Reuter, 1899 (Heteroptera, Miridae)

Eduard Wagner

(Moorreye 103, D-2000 Hamburg 62)

Abstract

The hitherto unknown male of *Atractotomus schmiedeknechti* Reuter, 1899 is descreibed and the species is transferred to the genus *Heterocapillus* E. Wagner.

Die Art wurde 1899 von Reuter beschrieben. Ihm lag nur das ♀ vor, das er von Fokker erhalten hatte. Es scheint sich jedoch um mehrere Exemplare gehandelt zu haben, da Reuter 2 Fundorte in der Beschreibung angibt. Gesammelt wurden die Tiere von Schmiedeknecht. Als Fundorte werden Oran und Tlemcen in Algerien angegeben. Seither hat niemand etwas über die Art publiziert, nur Oshanin führt sie in seinem Katalog an.

Jetzt liegt mir ein ♂ der Art aus Marokko vor, das von Pardo bei Ketama im Juli 1972 gefunden wurde. Der Verfasser erhielt das Tier von Herrn Dr. J. Ribes, Barcelona, dem Pardo die Hemiptera seiner Ausbeute zur Verfügung gestellt hatte. Da das ♂ der Art bisher nicht beschrieben wurde, möge hier eine Beschreibung dieses Tieres folgen.

Gestalt (Fig. 1a) lang-oval, 3 × so lang wie die Pronotumbreite. Schwarz, nur die Beine zum Teil hell. Die Behaarung lässt sich nicht einwandfrei ermitteln. Auf der Oberseite fanden sich Spuren einer hellen Behaarung. Das passt insofern zu der Beschreibung des ♀ durch Reuter, als er nur auf der Unterseite helle Schuppenhaare entdecken konnte und vermutet, dass die Oberseite abgerieben war.

Kopf geneigt, 0,72 × so breit wie das Pronotum (Fig. 1c). Scheitel 1,7 × so breit wie das Auge, sein Hinterrand undeutlich gekielt. Kopf unter den Augen nur kurz (Fig. 1b). Tylus stumpf. Fühlerwurzel nahe der unteren Au-

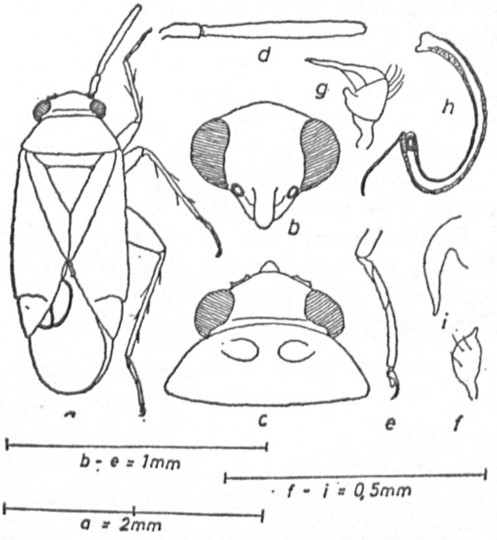

Fig. 1. *Heterocapillus schmiedeknechti* (Reuter) ♂. a = Gestalt, b = Kopf von vorn, c = Kopf und Pronotum von oben, d = Fühler, e = Hinterfuss, f = rechtes Paramer von oben, g = linkes Paramer von oben, h = Vesika von rechts, i = Apikalteil der Theka von rechts.

genecke. 1. Fühlerglied schwarz, 0,62 × so lang wie die Scheitelbreite; 2. Glied zylindrisch (Fig. d), in der Mitte geringfügig dicker, 3,4 × so lang wie das 1. und etwa 0,75 × so lang wie die Pronotumbreite; das 3. und 4. Glied fehlen. Beim ♀ sind sie nach Reuter blassgelb, und mit grosser Wahrscheinlichkeit trifft das auch auf das ♂ zu.

Pronotum (Fig. a+c) trapezförmig, Seiten fast gerade, Hinterecken beinahe spitz, Hinterrand leicht gerundet Schwielen nur wenig hervortretend. Scutellum einfarbig schwarz, seine Basis teilweise frei. Clavus, Corium und Cuneus ebenfalls einfarbig schwarz, glänzend. Incisur wenig tief. Membran schwarzgrau, Adern dunkel.

Unterseite schwarz. Beine hellgelb, nur die Hinterschenkel schwarz, an der Spitze schmal hell. Schienen mit feinen schwarzen Dornen, die länger sind, als die Schiene dick ist, aber derselben fast anliegen. An der Basis dieser Dornen finden sich stellenweise kaum erkennbare dunkle Punkte. Spitze des 3. Tarsengliedes etwas angedunkelt. Klauen schwarz. An den Hintertarsen (Fig. 1e) ist das 3. Glied so lang wie das 1. und 2. zusammen. Klauen schlank, gekrümmt. Haftläppchen etwa so lang wie seine Entfernung von der Klauenspitze.

Genitalsegment des ♂ stumpf kegelförmig. Rechtes Paramer (Fig. 1f) klein und oval, Hypophysis schlank. Linkes Paramer (Fig. 1g) mit langer, fast gerader Hypophysis. Paramerenkörper klein. Auf dem Sinneshöcker ein kurzer, dicker, abgerundeter Fortsatz. Vesika (Fig. 1h) klein, dünn, C-förmig, distal eine lange, stark nach aussen gebogene Spitze. Sekundäre Gonopore nahe der Basis dieser Spitze. Apikalteil der Theka (Fig. 1i) schlank, im basalen Teil stärker gekrümmt, distal zugespitzt.

Länge: ♂ = 2,4 mm (♀ nach Reuter 2,5 mm).

Der Verfasser hält dies ♂ für konspezifisch mit den von Reuter beschriebenen ♀♀. Der Bau der Genitalien spricht für eine Einordnung der Art in die inzwischen abgetrennte Gattung *Heterocapillus* E.Wagn. Mehrere Arten dieser Gattung haben eine ganz ähnlich geformte Vesika. Obgleich sich über die Behaarung der Art nichts aussagen lässt, hält der Verfasser es dennoch für erwiesen, dass sie in diese Gattung gestellt werden muss. Ihr richtiger Name lautet daher: *Heterocapillus schmiedeknechti* (Reuter), 1899.

Ich untersuchte 1 ♂ aus Maroc (Ketama), 7.72, Pardo leg. Allotypoid in meiner Sammlung.

Literatur

Reuter, O. M.: Capsidae novae mediterraneae I. — Öfversigt Finska Vetenskaps Soc. Förhandl. 42:141—142.

Rutsystemsbeteckning för angivande av fyndplats inom biologisk forskning

De naturvetenskapliga museerna, samfunden och föreningarna har kommit överens att inom de biologiska vetenskaperna använda enhetskoordinatsystemet för betecknande av fyndplatser och iakttagelseorter. Det är därför att rekommendera att alla entomologer inför koordinatbeteckningar på de etiketter de låter trycka.

Enhetskoordinatsystemet är benämningen på ett rätvinkligt koordinat- och rutsystem, vars p-axel sammanfaller med meridianen E 27° och som är angivet på de grund- och topografiska kartor i skala 1 :20 000 och 1 : 100 000 som har utkommit efter år 1962, samt på de år 1967 utkomna generalkartorna i skala 1 : 400 000. Ifrågavarande koordinatsystem anges på de nämnda kartorna med röda (bruna) rutor eller marginalbeteckningar. Enhetskoordinaterna är desamma som de på grundkartorna med svart angivna sifferbeteckningar och rutor, vilkas p-axel sammanfaller med p-axeln i enhetskoordinatsystemet.

Koordinattalet betecknar ett kvadratiskt område, vars storlek bestäms av antalet siffror i koordinatbeteckningarna. Områdena kan sammanslås till större eller delas i mindre rutor med decimaler. Därvid är koordinatbeteckningarnas sifferantal i motsvarande grad mindre eller större. Varje rutas decimalindelning sker med siffrorna 0 till 9 nedifrån uppåt och från vänster åt höger. Koordinatbeteckningen är tvådelad. Dess första del anger rutans p-koordinat och dess senare del rutans i-koordinat. Mellan dessa delar kan i skrift användas ett kolon. p-koordinaten börjar alltid med siffran 6 eller 7, vilken betecknar 1 000 km. i:s värde i origo vid p-axeln är 500 km. Antalet siffror i koordinattalen är sålunda alltid udda och p innehåller alltid en siffra mera än i.

Angivande av koordinaterna för en ort eller plats sker med den noggrannhet, som i det aktuella fallet kan betecknas som ändamålsenlig. Om t.ex. platsens läge anges med en noggrannhet av 1 kvadratmil, är koordinattalet 5-siffrigt (t.ex. 669 : 40 eller 66940). Om angivelsen sker med noggrannheten av 1 ha är koordinattalet 9-siffrigt (t.ex. 66940 : 4009 eller 669404009). I sammandrag gällande utbredningsuppgifter och i andra därmed jämförbara fall insamlas uppgifterna i regel per grundruta, varmed avses en ruta vars yta är 1 kvadratmil. Vid lokala undersökningar används givetvis mindre rutor.

Utöver platsangivelse baserad på rutsystemet bör platsbeteckningen lämpligen samtidigt även ske med angivande av kommunens, byns, terrängformationers osv. namn, likaså skall beteckningarna för de naturvetenskapliga provinserna fortfarande användas. Vid användningen av kommunernas namn är det skäl att beakta, att kommunnamnet betecknar det område, som kommunen omfattade under det år, under vilket iakttagelsen gjordes.

Finland 669 : 40
N. Sibbo
24. VII. 1971
Kalle Johansson

INNEHÅLL — SISÄLLYS

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Notulae Entomologicae LIII:65—137, 1973

Hemiptera of the Sudan, with remarks on some species of the adjacent countries 2.

Homoptera auchenorrhyncha: Cicadidae, Cercopidae, Machaerotidae, Membracidae and Fulgoroidea.

(Zoological contribution from the Finnish expeditions to the Sudan no. 33)

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Abstract

Notes are given on the taxonomy, habitats and distribution of the leafhoppers, collected by the author in 1961—1963 in the Sudan and the adjacent countries. The following new taxa are described: Cicadidae: *Cicadatra erkowitensis* sp.n. Cercopidae: *Literna intermedia ares* ssp.n., *L. adonis* sp.n., *Sepullia callosa pluto* ssp.n., *S. atalanta* sp.n., *Patriziana janus* sp.n., *Pseudomachaerota saturnus* sp.n., *Clovia kateri* sp.n., *C. bari* sp.n., *C. rubescens* sp.n., *C. malmul* sp.n., *Cordia peragrans iambe* ssp.n., *C. peragrans ianeira* ssp.n., *C. peragrans ianassa* ssp.n., *C. iphis* sp.n., *C. ianthe* sp.n. Machaerotidae: *Pectinariophyes lotuko* sp.n., *P. jur* sp.n. Membracidae: *Leptocentrus indigoferae* sp.n., *Acanthophyes mimus* sp.n. Fulgoridae: *Benamatapa hecate* sp.n. Dictyopharidae: *Paranagnia lyco* sp.n., *Philotheria eurydice* sp.n., *P. natalensis affinis* ssp.n., *P. antigone* sp.n., *P. circe* sp.n. Cixiidae: *Andes aulonias* sp.n., *A. dryas* sp.n., *A. hyleorias* sp.n., *Oliarus moestus choaspes* ssp.n., *O. moestus iphis* ssp.n., *O. minyrias* sp.n., *O. troas* sp.n., *O. gezira* sp.n., *O. lacon* sp.n., *O. sterope* sp.n., *O. sterope ulysses* ssp.n., *O. doris* sp.n., *O. ndelelensis cleon* ssp.n., *O. medanicus* sp.n., *O. pseudofrontalis* sp.n., *O. frontalis fuligo* ssp.n., *O. azrak* sp.n., *O. pleone* sp.n., *O. iasis* sp.n., *O. scylla* sp.n., *O. camilla* sp.n., *Myndus cupido* sp.n., *M. nymphias* sp.n., *Bashgultala maculipennis* sp.n. Delphacidae: *Tropidocephala umbrina* sp.n., *T. montana* sp.n., *T. aurantiaca* sp.n., *Eurysa imatonga* sp.n., *E. bidentata* sp.n., *E. atramentaria* sp.n., *Amblycotis alpinus* sp.n., *Nycheuma idas nilotica* ssp.n., *Oaristes phragmitis* sp.n., *O. impictus* sp.n., *Sogatella parakolophon* sp.n., *S. yei* sp.n. Achilidae: *Akotropis fulgens* sp.n. Meenoplidae: *Kermesia calypso* sp.n., *Eponisia pallida* sp.n., *Anigrus lobulifer* sp.n., *A. amaryllis* sp.n., *A. ochreatus* sp.n., *Meenoplus satyrus* sp.n., *M. suavis* sp.n., *M. ianthe* sp.n., *M. adonis* sp.n., *M. kassiphone* sp.n., *M. nausikaa* sp.n. Derbidae: *Malenia cydippe* sp.n., *Lophopidae: Elasmoscelis impala* sp.n., *E. damon* sp.n., *E. spinifer* sp.n. Tropiduchidae: *Tropiduchus marpsias* sp.n., *Numicia orphana* sp.n., *N. talassio* sp.n., *N. gorgo* sp.n., *N. doleib* sp.n., *Ommatissus tumidulus* sp.n., *O. alpinus* sp.n., *Trypetimorpha canopus* sp.n. Nogodinidae: *Philbyella elba* sp.n., *P. ailet* sp.n. Issidae: *Caliscelis berenice* sp.n., *Myrmissus bellicosus* gen. et sp.n., *Issopulex chloe* sp.n., *I. nasutus* sp.n., *Gwurra aphrodite* gen. et sp.n., *G. astarte* sp.n., *G. sappho* sp.n., *Durium scylax* sp.n., *Trienopa dionaea* sp.n.,*Adenissus brachypterus* gen. et sp.n. Tettigometridae: *Hilda minerva* sp.n., *H. ceres* sp.n., *H. diana* sp.n., *H. aurora* sp.n., *H. juno* sp.n. Ricaniidae: *Privesa pusilla* sp.n. Flatidae: *Paranotus deiopeia* sp.n., *Cryptoflata paphia* sp.n., *C. hera* sp.n., *Phantia artemis* sp.n., *P. coniceps* sp.n., *Caesonia danae* sp. n., *Afrophantia iphigeneia* sp.n., *Hameishara* gen. n., *Derisa pugionata* sp.n., *Juba barchanorum* sp.n., *Ulundia deidamia* sp.n., *Stenocyarda salsolae* sp.n., *Flatosaria dhalaica* sp.n.

Introduction

The present paper is a continuation of a previous survey (LINNAVUORI 1971) of the Hemiptera fauna of the Sudan, based on the collections made on my field trips in 1961—1963 to the Sudan, Eritrea, Ethiopia, Somalia and South Yemen. For details of these excursions the reader is referred to the preface of the first part of this survey and to the map of the collecting localities.

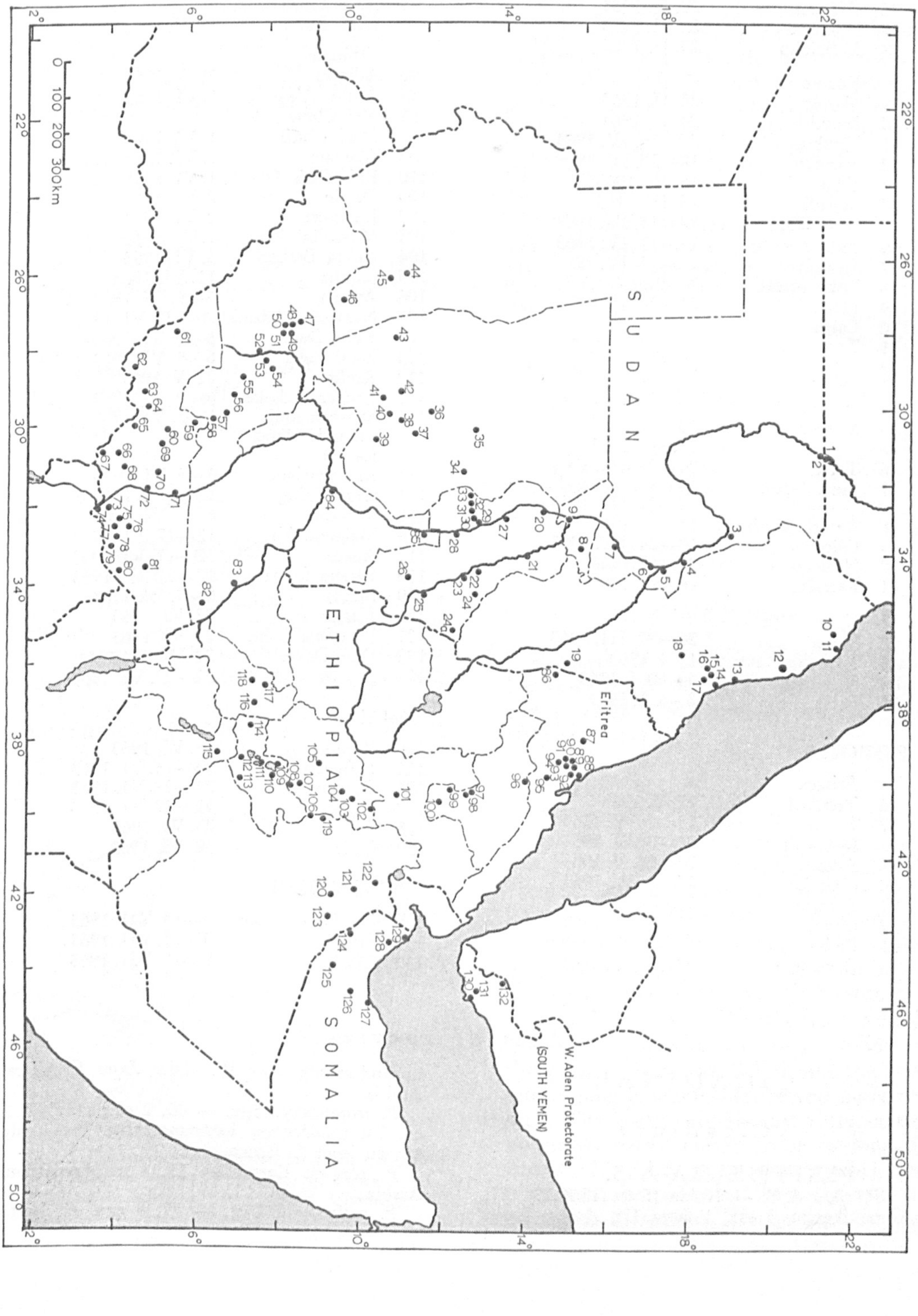
The African leafhopper fauna of Cercopidae, Machaerotidae, Membracidae and the Fulgoroidea has been ably treated by CAPENER, FENNAH, LALLEMAND, MAA and SYNAVE (see references). Although numerous publications have been devoted to the fauna of the Guinean subregion and of South and East Africa, little attention has been paid to N.E. Africa. The only major contribution relating to this area is FENNAH's article on the Delphacidae of the Sudan, based on my material from that country. The numerous new species described in that article as well as in the present paper suffice to show that the fauna of this part of Africa is much richer than reports have so far suggested. Undoubtedly many other new species still await discovery, especially in the Equatoria Province.

The types of the new species are located in my private collection, unless otherwise indicated. Some duplicates are deposited in the Zoological Museum of Helsinki University and in the British Museum.

List of the collecting localities shown in Map 1. In the text the collecting localities are indicated by numbers: 6 = Ed Damer, 61—52 = Tambura-Wau (the specimen found on the way from Tambura to Wau), 73—75 = Opari-Magwe, etc.

THE SUDAN

	Northern Province	
1	Debeira	6—13. X. 1962
2	Wadi Halfa	14—17. X.1962
3	Abu Hamed	18—20. X. 1962
4	Abidiya	18—20. X. 1962
5	Atbara	27—30. X. 1962
6	Ed Damer	5—10. VII. 1961, 27—30. X. 1962
7	Shendi	2—5. XI. 1962
	Khartoum	
8	Wad Hassuna	5—6. XI. 1962
9	Khartoum	30. VI—3. VII. 1961, 7. XI. 1962
	Kassala	
10	Jebel Elba	10—14. XII. 1962
11	Mersa Halaib	10—14. XII. 1962
12	Mohammed Qol	15. XII. 1962
13	Port Sudan	15. XII. 1962
14	Suakin	5. XII. 1962
15	Abend Pass	5. XII. 1962
16	Sinkat	15. XII. 1962
17	Erkowit	5—10. VII. 1961, 4. XII. 1962
18	Haiya	1—3. XII. 1962
19	Kassala	29—30. XI. 1962
	Blue Nile	
20	El Geteina	11. V. 1963
21	Wad Medani	11—14. XI. 1962
22	Singa	15—17. XI. 1962
23	Umm Banein	14. XI. 1962
24	Abu Hashim	23—24. XI. 1962
24a	Galegu	23—24. XI. 1962
25	Ed Damazin	15—17. XI. 1962
26	Ingessana Mts. (Tabi Hills)	17—22. XI. 1962
27	Wad es Zaki	10. V. 1963
28	El Jebelein	2. I. 1963
29	Kosti	22. I. 1963
30	Wusa'a	23—24. I. 1963
31	Umm Koweika	23—24. I. 1963
32	Selima	24. I. 1963
33	Tendelti	25. I. 1963
	Kordofan	
34	Umm Ruwaba	25—28. I. 1963
35	El Obeid	29. I. 1963
36	Dilling	30. I. — 1. II. 1963
37	Jebel Shivai	6—7. II. 1963
38	Umm Shuheita	6—7. II. 1963
39	Talodi	12—13. II. 1963
40	Kadugli	2—14. II. 1963
41	Keilak Lake	8—11. II. 1963
42	El Lagowa	14. II. 1963
43	Babanusa	15. II. 1963
	Darfur	
44	Ed Daein	3—7. V. 1963
45	Abu Matariq	2. V. 1963
46	Safaha	30. IV. 1963
	Bahr el Ghazal	19. II. 1963
47	Aweil	18. II. 1963
48	Wararair	19. II. 1963
49	Godatair	18. II. 1963
50	Khor Kyom	18. II. and 28. II. 1963
51	Pongo R.	19—20. II. and
52	Wau	27. IV. 1963
53	Gwurra	21. II. 1963
54	Maleit Lake	21. II. 1963
55	Tonj	22. II. 1963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56	Gel R.	22. II. 1963
57	Rumbek	22. II. 1963
58	M'Boloko	23. II. 1963

Equatoria

59	Mwolo	23. II. 1963
60	Mundri	24. II. 1963
61	Tambura	25—26. IV. 1963
62	Yambio	18—25. IV. 1963
63	Ibba	16. IV. 1963
64	Maridi	15. IV. 1963
65	Senambio	14—15. IV. 1963
66	Yei	12—13. IV. 1963
67	Iwatoka	12—13. IV. 1963
68	Loka forest	8—10. IV. 1963
69	Lirek	25—26. II. 1963
70	Lalyo	25—26. II. 1963
71	Terakeka	2—6. III. 1963
72	Juba	27. II.—2. III. 1963
73	Opari	13. III. 1963
74	Nimule	10—13. III. 1963
75	Magwe	13. III. and 31. III. 1963
76	Torit	24—25. III. 1963
77	Lotti forest	14—17. III and 28—31. III. 1963
78	Kateri (Katire)	18. III. 1963
79	Gilo	18—24. III. 1963
80	Nagichot	26. III. 1963
81	Kapoeta	26. III. 1963

Upper Nile

82	Boma	26—27. III. 1963
83	Pochalla	13. I. 1963
84	Malakal	5—20. I. 1963
85	Renk	2—4. I. 1963

ETHIOPIA

Eritrea

86	Tessenei	22. V. 1963
87	Keren	23—24. V. 1963
88	Massawa	27—30. V. 1963
89	Ailet	25—26. V. 1963
90	Ghinda	25—26. V. 1963
91	Asmara	23—24. V. 1963
92	Dogali	25—26. V. 1963
93	Embatcalla	25—26. V. 1963
94	Decamere	25—26. V. 1963
95	Addi Caieh (Adi Kaie)	31. V. 1963

Ethiopia

96	Adigrat	31. V. 1963
97	Amba Alagi	1. VI. 1963
98	Mai Chew (Mai Chio)	1. VI. 1963
99	Alamata	1. VI. 1963
100	Raia Plain	1. VI. 1963
101	Dessie	2. VI. 1963
102	Karakore	2. VI. 1963
103	Mussolini Pass	3. VI. 1963
104	Debra Berhan	3. VI. 1963
105	Sululta	11. VI. 1963
106	Awash	6—9. VI. 1963
107	Nazareth (Adama)	20—21. VI. 1963
108	Koka Dam	6—9. VI. 1963
109	Zwai Lake	6—9. VI. 1963
110	Asella	21. V. 1963
111	Langanno Lake	6—9. VI. 1963
112	Shashamanni (Wondo cloud forest)	6—9. VI. 1963
113	Agheresalam	6—9. VI. 1963
114	Omo Valley	12—17. VI. 1963
115	Wondo	6—9. VI. 1963
116	Maigudo Mt.	12—17. VI. 1963
117	Agaro	12—17. VI. 1963
118	Belleta forest	12—17. VI. 1963
119	Machi	6—9. VI. 1963
120	Harrar	22. VI. 1963
121	Faramaia Lake	22. VI. 1963
122	Dire Dawa	22. VI. 1963
123	Jiggiga	22—23. VI. 1963

SOMALIA

124	Borama	29. VI. 1963
125	Hargeisa	23—28. VI. 1963
126	Daragodleh	23—28. VI. 1963
127	Berbera	25—27. VI. 1963
128	Silil	29. VI. 1963
129	Zeila	30. VI. 1963

SOUTH YEMEN

130	Sheikh Othman	9—15. VII. 1963
131	Lahej	9—15. VII. 1963
132	Dhala	9—15. VII. 1963

List of species

CICADINAE

Cicadinae

PLATYPLEURA A.-S.

P. clara A.-S. — Nubia (Stål 1866:23), 21, Umm Barona, 3 exx, 1 larva. On *Acacia.* Larva in sand among roots. W. Africa, Zaire, E. Africa, Arabia.

P. truncaticeps Sgn. — 40, 1 ex.; near 42, 1 ex. On *Combretum hartmannianum.* Previously known from E. Africa.

P. plagiata Karsch — 17, 1 ex. Cameroon, Arabia.

P. rutherfordi Dist. — 77, 4 exx. At lamp.

W. Africa (Nigeria, Cameroon etc.), Zaire, Angola, E. Africa.

P. divisa (Gm.) — 64—65, 1 ex.; 62, 1 ex. At lamp. S. and E. Africa, Ethiopia.

P. melanaria Dist. — 59—60, 1 ex. On trees in a burned forest. Zaire, E. Africa.

IOBA Dist.

I. veligera (Jac.) — 81—82, 1 ex. At lamp. E. Africa.

MUNZA Dist.

M. sudanensis Dist. — Equatoria: Benemana River, Meredi, 1 ex, type, British Museum. Endemic.

UGADA Dist.

U. limbata (F.) — 62, several exx. At lamp. W. Africa, Zaire, Angola.

U. grandicollis (Gm.) — 77, 1 ex. At lamp. W. Africa, Zaire, Angola, Kenya.

Tibicinae

CICADATRA Klt.

C. erkowitensis sp.n.

Length 23 mm. Like *C. longipennis* Schum. (Israel) (Colouring, elytra long and narrow, 3 × as long as broad, 3rd and 4th apical cells about 4 × as long as broad etc.), but much smaller and more gracile. Pronotum 2.3 × as broad as long (about 2.6 × in *longipennis).* The long falcate appendage of penis (Fig. 1 c—d) not strongly S-shaped as in *longipennis* (Fig. 1 e), the other denticulation also different. Other genitalia as in Fig. 1 a—b. Redescription of *longipennis* in LINNAVUORI 1962:34—36.

Kassala: Erkowit, 1 ♂, holotype, 5—10. VIII. 1961.

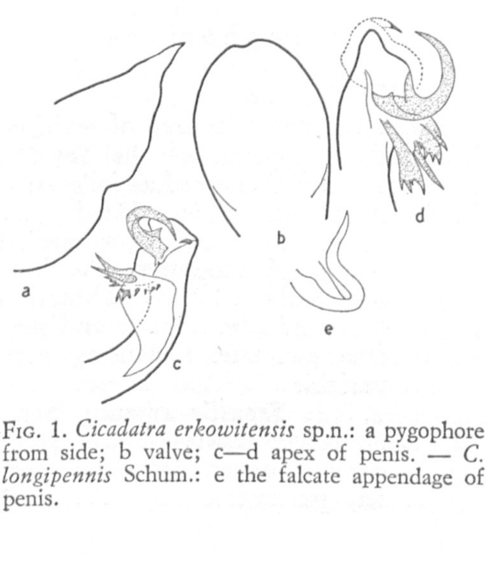

FIG. 1. *Cicadatra erkowitensis* sp.n.: a pygophore from side; b valve; c—d apex of penis. — *C. longipennis* Schum.: e the falcate appendage of penis.

TRISMARCHA Karsch

T. ferruginosa Karsch — 63—62, 1 ex.; 62, 2 exx.; 66—64, many exx. At lamp. W. Africa (Cameroon, Gabon, Togo, Guinea etc.), Zaire, Angola, E. Africa.

PANKA Dist.

P. umbrosa Dist. — 66—67, 1 ♀ probably of this species. At lamp. Zaire.

LACETAS Karsch

L. annulicornis Karsch — 74, 2 exx.; 66—64, 3 exx. At lamp. Zaire.

CERCOPIDAE

Cercopinae

Revised by LALLEMAND 1949 and LALLEMAND & SYNAVE 1961, and the genus *Locris* St. revised by SYNAVE 1957b:115—129.

LITERNA St.

L. intermedia Hgl. ssp. *ares* ssp.n.

Length 7.5 mm. Uniformly dark yellow-brown. Elytra totally dark yellow-brown, with a transverse band of grey hairs just caudad of tip of scutellum.

General structure and genitalia (Figs. 2 c—d and 3 a) as in the nominate form.

Differs greatly in colouring from the nominative form (W. Africa, Zaire). The male genitalia are very similar to those, of *L. haglundi* Schm. but the present species is much smaller and more robust. The elytra are shorter than in the nominate form, about twice as long as broad (2.3—2.5 × in *intermedia)*, the pronotum is somewhat broader and its colouring dissimilar. The genitalia differ

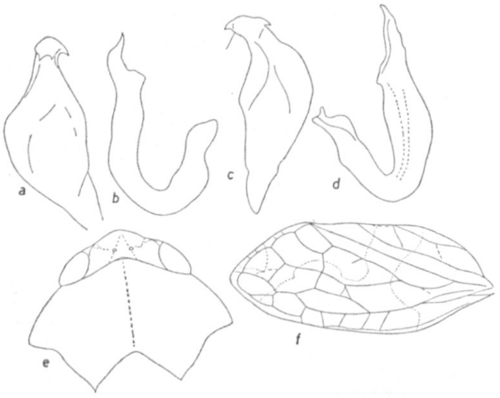

Fig. 2. *Literna limbata* Schm.: a stylus; b penis from side. — *L. intermedia* Hgl. ssp. *ares* ssp.n.: c and d same. — *Pseudomachaerotha saturnus* sp.n.: e head and pronotum; f elytra.

from those of *L. limbata* Schm. (Fig. 2 a—b).

Equatoria: Yei- Iwatoka, 1 ♂, type, 12—13. IV. 1963.

Material studied, *L. intermedia* Hgl.: 1 ♂, Cameroon, 5 km. S of Muëli, 6. XI. 1958, Knorr (det. Synave), *L. haglundi* Schm.: Cameroon, Muëli, some exx., 1. XII. 1958, Knorr (det. Synave) and *L. limbata* Schm.: Cameroon, Malende, 2 exx., 12. XII. 1957, Knorr (det. Synave). All this material in my collection.

L. adonis sp.n.

Length 7 mm. Dark yellow-brown. Elytra brown, costal margin narrowly and apical margin along the marginal vein more broadly rosy, apical veins also tinged with the same colour. Flying wings brown. Legs yellow-brown.

Of the *intermedia* group. Elongate. General structure as in *intermedia*. Median depression of frons extending to upper margin of head, provided with a few faint transverse ridges. Vertex with a distinct median carina. Elytra 2.3—2.6 × as long as broad. Male genitalia as in Fig. 3 b—c.

Equatoria: Yei- Iwatoka, 1 ♂, type and 1 ♀ paratype, 12—13. IV. 1963.

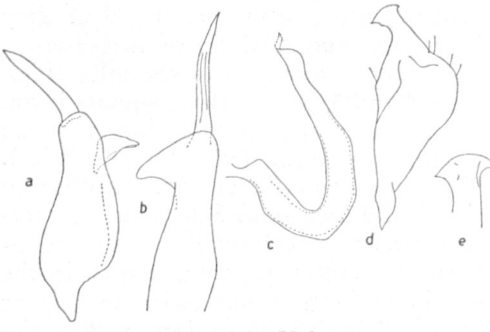

Fig. 3. *Literna intermedia* Hgl. ssp. *ares* ssp.n.: a genital plate. — *L. adonis* n.sp.: b same; c penis; d—e stylus.

LOCRIS St.

L. rubra (F.) — 26, 1 ex.; 41, numerous exx.; 74, 1 ex. All the Sudanese specimens are uniformly red. On grasses in wet shore meadows. W. Africa, Zaire, Sudan, Ethiopia.

L. rubens (Er.) — 51, 1 ex. W. Africa, Zaire.

L. erythromela (Wk.) f. *intermedia* Scht. — 64—63, 3 exx. W. Africa, Zaire, Uganda.

L. maculata (F.) — Many exx. from 68 and 66—67. On swampy meadows. W. Africa, Zaire.

L. godinai Lall. — 62, 1 ex. Zaire, Uganda.

L. katangensis Dist. — 77, 2 exx. Zaire (Katanga), Rhodesia.

L. bequaerti Lall. — 66—64, 1 ex, W. Africa, Zaire, Uganda.

L. pullata St. — Many exx. from 68, 64—63 and 62. On swampy meadows. W. Africa, Zaire.

MACHADOA Lall. & Syn.

M. invenusta (Jac.) — 26, 4 exx.; near 25, 1 ex.; 68, 1 ex.; 74, 4 exx.; 66—64, 1 ex. On moist meadows. W. Africa, Zaire, Sudan.

Aphrophorinae

SEPULLIA St.

A difficult genus in need of revision. The Sudanese species of the *Sepullia* group can be distinguished as follows:

1 (2) A broad species. Head very short, 0.31 × as long as median length of pronotum, the last-named about 1.75 × as broad as long medially, sparcely and very fine punctate. Colouring very variable .... *Sepullia murray* (Sgn.)

2 (1) Narrower species. Head considerably longer. Pronotum coarsely punctate 3

3 (6) Punctures of elytra, especially in clavus, very close to each other, brown, forming contrasting clearly visible lines, spaces between these lines distinctly elevated 4

4 (5) Elytra with a well-developed, often dark, impunctate round subapical callosity. Head distinctly and densely punctate. Pronotum and scutellum coarsely punctate .... *Sepullia* blenna St. (S. Africa)

5 (4) Subapical callosity of elytra faint, punctate. Head very faintly punctate. Also puncturing of pronotum and of scutellum distinctly finer .... *Patriziana janus* sp.n.

6 (3) Puncturing of elytra sparser, distance between punctures in the rows at least 0.5 × as long as the diameter of a puncture, spaces between rows flat 7

7 (8) Subapical callosity of elytra large, globose, impunctate and shiny. Elytra otherwise opaque and finely punctate .... *Sepullia callosa pluto* ssp.n.

8 (7) Subapical callosity of elytra small or absent, with a few punctures. Elytra shiny, coarsely punctate 9

9 10) Head ± sharply triangular. Pronotum flattish, sparsely punctate ...... *Abbalomba typica* Dist.

10 (9) Head blunt. Pronotum convex, densely punctate .... *Sepullia atalanta* sp.n.

S. murrayi (Sgn.)

An easily distinguished species. Very variable in colouring. In most Sudanese specimens the vertex and the pronotum are greenish and the scutellum and the elytra reddish brown, the last-named with ± distinct whitish markings.

24—24 a, 2 exx.: near 25, 1 ex.; 22—25, 1 ex.; 36—40, 1 ex.; 40, many exx.; 41, 1 ex; 38—37, several exx.; 74, 1 ex.; 30 km N of 71, many exx. On various trees such as *Combretum hartmannianum* and *Tamarindus indicus*. W. Africa, Zaire, Ethiopia, E. Africa (Uganda, Ruanda).

S. atalanta sp.n.

Length 4—4.5 mm. Shiny. Whitish ochraceous with a ± contrasted dark pattern. Puncturing mainly concolorous or slightly darker. Face shiny black. Tylus with black sides and a brown median stripe. Pronotum with a transverse black spot behind eyes, in dark specimens also a large curvate transverse black discal spot on either side, disk also with small brown spots. Scutellum medially brown, base black, apex pale. Elytra opaquely shiny, with two blackish irregular transverse bands, one basal, one median, in dark specimens branch extending from median band through clavus to inner end of basal band; apex also ± darkened; the pale areas with some small dark spots; puncturing mainly concolorous; apical veins partly dark. Under surface mainly blackish. Legs yellow-brown, heavily marked with black.

Robust. Anterior margin of head roundedly rectangular in outline. Postclypeus flattish, only very obsoletely punctate. Supra-antennal triangles and vertex rather densely minutely punctate. Vertex 0.43 × as long as median length of pronotum, 0.67 × as broad as long. Distance between ocelli as long as distance between an ocellus and eye. Pronotum 1.71 × as broad as long at middle, median carina very faint, anterior margin more sharply produced than in the other species, disk densely and distinctly punctate. Scutellum densely punctate. Elytra densely and rather coarsely punctate, apex roundish; subapical callosity of corium small but distinct, apical callosity of clavus very small. Male genitalia in Fig. 4 d—f.

Of the species described by LALLEMAND (1920, 1930, 1935), *S. callosa* Lall. (Somalia) and *S. bukamensis* Lall.

(Zaire) are of equal size (length 4 mm). The former differs from *S. atalanta* in the large black subapical callosity of the elytra, the latter in the uniformly reddish brown upper surface and the dense and fine puncturing. The other species, *S. johannae* Lall. (Zaire) and *S. sankisiensis* Lall. (Zaire), are bigger, length 5 mm, and differently coloured.

Equatoria: Opari- Magwe, 1 ♂, type and 1 ♀ paratype, 13. III. 1963; 66—64, 1 ♂ paratype.

S. callosa Lall. ssp. *pluto* ssp.n.

Length 4 mm. Opaquely shiny. Yellowish brown. Postclypeus with a few dark brown lateral arcs. Antennal pits darkened. Elytra opaque, pale, yellowish brown, with two irregular whitish transverse bands, one at apex of scutellum, broad, interrupted by transverse oblique band of the ground colour extending from corium to scutellar margin of clavus, one at apex of clavus, broadening laterad and including a remarkably large, impunctate, round, brown, subapical callosity, partly embrowned veins and a small round brown callosity just at tip of clavus; apical margin with a whitish spot; puncturing concolorous or only slightly darker; veins concolorous save in the apical fascia. Under surface and legs yellow-brown, femora with a reddish tinge.

Robust, 2.2 × as long as broad. Anterior margin of head roundedly bluntly angular in outline. Postclypeus flattish, in apical margin of head obsoletely punctate, ventrally nearly impunctate. Supra-antennal triangles distinctly punctate. Vertex 0.38 × as long as median length of pronotum, 1.73 × as broad as long at basal angles of eyes, only minutely punctate. Distance between ocelli shorter than distance between an ocellus and eye. Pronotum 1.7 × as broad as long at middle, finely and concolorously punctate, with a distinct median carina anteriorly. Scutellum faintly concolorous punctate. Elytra about 2.16 × as long as broad, finely and mainly concolorously punctate, surface not elevated between puncture rows. Apex of elytra obliquely and roundedly truncate.

The nominate form *S. callosa callosa* Lall. (Somalia) is darker: frons with two longitudinal lines on upper part and a transverse band between eyes black; puncturing of pronotum and scutellum black; dark pattern on elytra blackish brown, subapical callosity black; anterior and middle femora with black longitudinal lines, posterior ones black.

Somalia, Hargeisa, 1 ♀, type, 23—28. VI. 1963.

PATRIZIANA Lall.

Distinguished from *Sepullia* by the puncturing: punctures on pronotum and scutellum arranged in transverse rows, those on elytra in longitudinal or oblique furrows, nearly parallel on clavus. The puncturing in *Sepullia* is generally ± irregular. *S. blenna* St. (South Africa) seems to be an intermediate, however. Since the male genital structure is also similar in both genera, *Patriziana* is apparently congeneric with *Sepullia*.

P. janus sp.n.

Length 4.25 mm. Shiny. Puncturing brown. Face whitish ochraceous. Postclypeus with reddish lateral arcs and median stripe; at antennae a black transverse band joining a longitudinal band on either side of upper part of postclypeus and extending to base of tylus, these stripes together forming a shiny black U-shaped figure, black antennal pits also joined to this figure. Vertex and pronotum brownish olivaceous, basal margin of the latter narrowly whitish. Scutellum pale reddish brown. Elytra mainly whitish, base and an irregular broken transverse band at middle brown, apical veins also embrowned. Under surface reddish brown. Fore and middle legs blackish, with pale longitu-

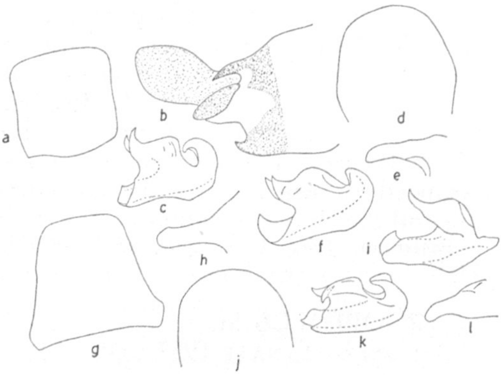

FIG. 4. *Patriziana janus* sp.n.: a valve; b pygophore from side (sclerified areas of apical part stippled); c penis from side. — *Sepullia atalanta* sp.n.: d valve; e middle process of pygophore; f penis from side. — *S. blenna* St.: g—i same. — *Abbalomba typica* Dist.: j—l same.

dinal stripes. Hind femora yellow-brown, apically dark, tibiae blackish, tarsi yellowish brown.

Resembling *Sepullia blenna* St. (S. Africa). Body about 2.3 × as long as broad. Anterior margin of head rather sharply angulate in outline. Postclypeus flattish and impunctate, only the transverse furrows with very small punctures. Supra-antennal triangles only very obsoletely punctate. Vertex 0.45 × as long as median length of pronotum, 0.68 × as broad as long, only very obsoletely punctate. Pronotum 1.35 × as broad as long at middle, with a faint median keel, puncturing rather dense and fine, forming ± distinct rows. Scutellum densely and finely punctate. Elytra 2.26 × as long as broad, apex rounded; punctures, especially in clavus, very close to each other, forming distinct rows, spaces between these rows distinctly elevated as in *blenna;* subapical callosity of corium reduced , punctate, apical callosity of clavus also extremely small. Male genitalia in Fig. 4 a—c, those of *S. blenna* in Fig. 4 g—i.

In *P. somalica* (Lall.) (Somalia) the corium is provided with a distinct apical callosity, the colouring is different and the elytra are punctate with black. *P. elongata* Lall. (Somalia) is much narrower. In *P. brunnea* (Lall.) (Zaire) the clavus and the apical part of the corium are provided with a shiny black callosity and the colouring is different. The new species differs from *Sepullia blenna* in the much finer puncturing, the more sharply triangular vertex, the longer pronotum and the reduced subapical callosity of the corium.

Equatoria: Kapoeta- Boma, 1 ♂, type, 26—27. III. 1963.

ABBALOMBA Dist.

A. typica Dist.

Length 4.5—5.2 mm. Shiny. Puncturing concolorous. Face pale greenish or yellowish, with a broad black transverse band between eyes. Vertex yellowish brown. Pronotum green or yellowish brown. Scutellum reddish brown. Elytra variegated with ochraceous and reddish brown, pattern not contrasted. Under surface black. Legs yellow-brown, heavily marked with black.

Rather elongate, about 2.4 × as long as broad. Head sharply produced (less strongly in the Imatong population). Face flattish, only very finely punctate. Supra-antennal triangles and vertex distinctly but finely punctate. Vertex 0.56—0.62 × as long as median length of pronotum, 1.1—1.2 × as broad as long, tylus elevated. Pronotum 1.84—1.85 × as broad as long medially, flattish, distinctly but sparsely punctate, distance between punctures often at least as long as the diameter of a puncture; anterior margin roundedly produced, lateral margins long and straight (curvate in *Sepullia,* median carina faint. Scutellum finely punctate. Elytra about 2.2 × as long as broad, apex roundish, densely and rather coarsely punctate throughout, puncturing coarser than on pronotum; subapical callosity of corium faint and punctate, apical callosity of clavus absent. Male genitalia in Fig. 4 j—l.

73—75, 2 exx.; near 79, alpine zone, 2 exx. E. Africa. The genus *Abbalomba* is probably identical with *Sepullia*.

PSEUDOMACHAEROTA Mel.

P. saturnus sp.n.

Fig. 2 e. Length 5.75 mm. Shiny. Head and pronotum yellowish brown, with a reddish tinge. Scutellum rosy. Basal third of elytra dark brown, with base of costal margin reddish; apical two-thirds greyish ochraceous, with a dark brown band along apical margin including a pale spot in 3rd apical cell, then recurving basad and filling apex of clavus and the adjacent corium, colour pattern fairly strongly contrasted; costal margin with small dark spots; veins concolorous, partly reddish. Under surface yellowish brown. Abdomen tinged with red.

Robust and convex, 2.43 × as long as greatest width. Hair covering short, erect. Upper surface uneven, densely punctate and rugose. Head 0.68 × as broad as pronotum, small, declivous. Postclypeus moderately convex, with faint transverse puncture rows on either side, also medially with some scattered punctures. Vertex nearly 0.3 × as long as median length of pronotum, 2.1 × as broad as long; tylus flattish, about 3.2 × as broad as long; ocellar area triangularly raised; supra-antennal triangles small, nearly vertical; puncturing of vertex obsolete. Pronotum nearly twice as broad as long medially, strongly convex in basal two-thirds, sloping ventrad apically; lateral margins strongly diverging caudad; disk densely punctate and rugose, with a faint raised median carina. Scutellum elevated, with a large rhomboidal median depression. Elytra 2.5 × as long as broad, densely and distinctly punctate, veins raised, venation as in Fig. 2 f, apical half of costal margin with extra cross veins. Legs short, hind tibiae with one strong lateral spine.

The genus has previously been known from Madagascar and South Africa. It was originally described as a member of Machaerotidae by Melichar (1915), but recently transferred to Ceropidae by Maa (1963:8). The new species is recognized by such features as the colouring and the elytral venation.

Equatoria: Juba, 1 ♂, type, 27. II—2. III. 1963.

POOPHILUS St.

Revised by Synave 1957 b:85—91.

P. costalis (Wk.)

Variable in colouring, size and body form. Especially specimens from the southern forest areas are blackish brown.

Many exx. from 17; 10; 14; 25; 26; 22—25; 85—84; 54; 63—62; 78—79; 68; 77; 64—63; 74; 61—52; 76; 66—67; 66—64 and 62. On grasses in various localities, in swampy meadows, forests, sandy localities, etc. Common in Equatoria and spreading northwards to the provinces of Blue Nile, Upper Nile and Kassala. In the other areas apparently sparse or absent. Africa S of the Sahara, Arabia, Iran.

P. latiusculus (St.) — 78—79, 1 ex.; 77, 1 ex.; 66—67, 1 ex. Zaire, E. and S. Africa.

P. grisescens (Schaum) — Many exx. from 26; 85—84; 46—45; 54; 55; 72; 72—74; 74; 30 km N of 71. On grasses mainly in moist localities. W. Africa, Zaire, Ruanda, Arabia.

P. terrenus (Wk.) — Near 79, several exx. 78—79, several exx.; 77, 1 ex. Zaire, E. and S. Africa.

PTYELUS Lep. & Serv.

P. grossus (F.) — 77, 1 ex.; 62, many exx.; 66—64, 1 ex. In rain and gallery forests. W. Africa, Zaire, Ethiopia, S. and E. Africa.

CLOVIA St.

A large and difficult genus, recently revised by Synave (1957 b:93—110).

C. dorsalis Jac.

An enigmatic species known only in the female sex. Probably only a short-headed form of *C. bigoti* (Sgn.).

77, 2 exx. E. Africa.

C. prolixa St. — 68, 1 ex.; 66—67, 1 ex. Zaire, E. and S. Africa.

C. kateri sp.n.

Length 6.5—7.5 mm. Shiny. Colouring very variable. Darkest specimens uniformly black, with blackish brown elytra and dark yellow-brown legs. Palest specimens ochraceous with median parts of face and of under surface of thorax dark brown, base of corium with a dark longitudinal stripe, commissural margin of clavus and upper apical margin of corium narrowly dark and 1st apical cell with a dark spot. Intermediates between these two extremes also exist.

Resembling *C. pseudoprolixa* Lall. in general structure. Penis (Fig. 10 e—f) with two broad, bifurcate apical appendages, the upper branch of these appendages short, claw-like and with two short claw-like apical spines. Stylus in Fig. 10 g.

Measurements: Vertex 0.72—0.79 × as long as broad, 0.85—1.0 × as long as median length of pronotum. The last-named 1.55—2.0 × as broad as long medially.

Upper Nile, Malakal, 1 ♂ (pale), type, 5—20. I. 1963; Sobat, 1 ♀ paratype (pale), 5—20. I. 1963; 78—79, 3 paratypes (dark); 77, 1 paratype (dark). In moist meadows.

C. pseudoprolixa Lall.

Penis as in Fig. 9 b—c, branches of apical appendages long and falcate.

Numerous exx. from 85—84; 54; 55; 68; 30 km N of 71. In both mesic and dry meadows. Zaire, Ruanda.

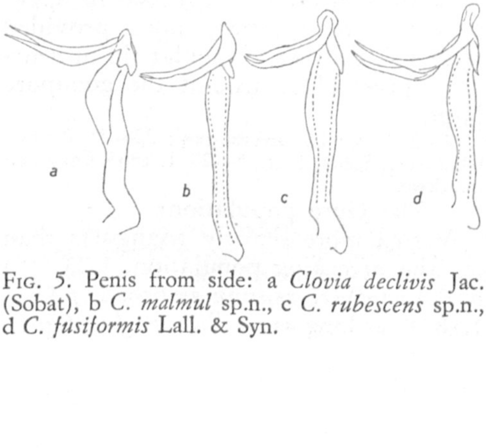

Fig. 5. Penis from side: a *Clovia declivis* Jac. (Sobat), b *C. malmul* sp.n., c *C. rubescens* sp.n., d *C. fusiformis* Lall. & Syn.

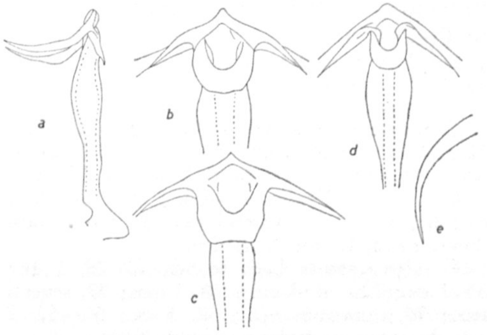

Fig. 6. *Clovia declivis* Jac. (Safaha): a penis from side; b—d apex of same, ventral aspect (b from Malakal, c from Ingessana Mts., d from Sobat); e appendage of same in broad aspect (Sobat).

C. minuta Lall.

Much smaller than the preceding. Apical appendages of penis (Fig. 9 d) shorter and thicker.

30 km N of 71, several exx. (together with the preceding species); 76—81, 1 ex. Zaire, E. Africa.

C. bari sp.n.

Length 6.5 mm. Rather opaque. Dark yellowish brown. Face mainly blackish, sides of postclypeus and upper margin of head usually paler. Vertex, pronotum and scutellum mainly blackish, with faint brownish longitudinal stripes, apical margin of vertex narrowly pale. Clavus and base of corium darker brown, apical part yellowish brown, apex with a dark longitudinal stripe, 1st apical cell with a large callose dark spot. Under surface blackish brown, sides of thorax and of venter pale. Legs dark yellow-brown.

Resembling *C. pseudoprolixa* Lall., but smaller and vertex shorter. Hair covering dense, greyish. Vertex 0.69—0.75 × as long as broad, 0.85—0.89 × as long as median length of pronotum. Pronotum about 1.92 × as broad as long at middle. Penis (Fig. 10 a—c): stem much longer, more slender and straighter than in *pseudoprolixa*, apical appendages differently shaped. Stylus in Fig. 10 d.

26, 2 ♂ paratypes; Equatoria, Juba- Terakeka, 1 ♂, type, 2—6. III. 1963.

C. masombweana Syn. — 55, 1 ex.; 51, 1 ex.; 72—74, 2 exx.; 68, 1 ex.; 59—60, 1 ex. In moist and swampy meadows. Zaire, E. and S. Africa.

C. centralis Dist. — 72—74, 1 ex.; 78—79, 1 ex.; 68, 1 ex.; 77, several exx. In moist meadows. Zaire, E. and S. Africa.

C. nigroclypeata Lall. & Syn. — 26, 1 ex.; 83, 1 ex.; 72—74, 4 exx.; 70, 2 exx.; 77, several exx.; 74, numerous exx.; 62, 1 ex.; 66—67, 2 exx. In mesic or moist meadows. Zaire.

C. fusiformis Lall. & Syn.

Penis as in Figs. 5 d, 9 a, stem slender, apical appendages very long, falcate.

74, numerous exx. Very common together with the preceding on grasses in a wet shore meadow of the Nile. Zaire.

C. declivis Jac.

A widely distributed species. There are certain differences, especially in the length of the vertex and in the shape of the penis, between different populations. A large material from various parts of the range of *declivis* is needed to elucidate the taxonomic value of this variability. *C. declivis* is distinguished from the related species by the shape of the penis: stem ± distinctly expanding in upper part in lateral aspect; apical appendages long and gracile, sharply falcate also in broad aspect; plate around gonopore ± squarish, with ventral margin ± truncate; apex of penis in ventral aspect often narrowing to a triangular tip.

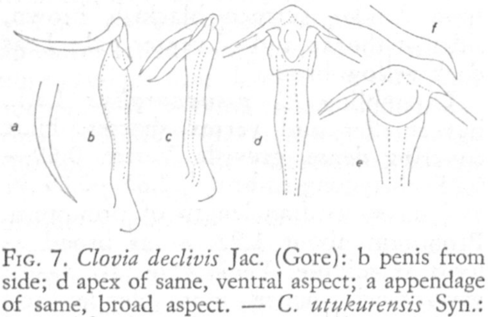

Fig. 7. *Clovia declivis* Jac. (Gore): b penis from side; d apex of same, ventral aspect; a appendage of same, broad aspect. — *C. utukurensis* Syn.: c, e and f same.

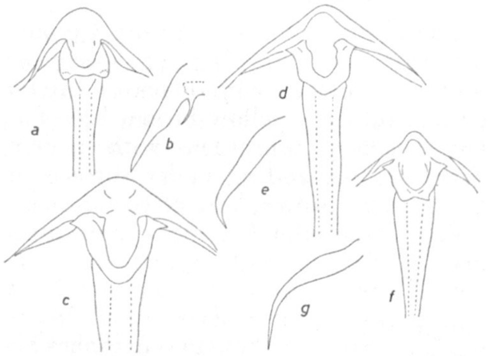

Fig. 8. Apex of penis, ventral aspect and appendage of same in broad aspect: a—b *Clovia malmul* sp.n., c—e *C. rubescens* sp.n., f—g *C. declivis* Jac. (Safaha).

The Safaha population:

Vertex remarkably long, 1.12—1.19 × as long as broad, 1.23—1.24 × as long as median length of pronotum. Pronotum 1.67 × as broad as long medially. Penis (Fig. 6 a, 8 f—g) relatively slender; plate around gonopore rather small, bearing a sharp triangular tooth on either side at base.

46—45, 3 exx. On *Phragmites communis.*

The Upper and Blue Nile populations:

Vertex 1.00—1.03 (♂) or 1.05—1.11 (♀) × as long as broad, 1.13—1.26 × as long as median length of pronotum. The last-named 1. 7.—1.8. × as broad as long medially. Penis (Fig. 5 a, 6 b—e) with stem distinctly expanded in upper part in lateral aspect, apex provided with a ± distinct triangular tip in ventral aspect, plate around the gonopore large.

7—8, 1 ex.; 26, several exx.; 22—25, 2 exx.; 84, 2 exx.; Sobat, 1 ex., 5—20. I. 1963. On moist meadows.

The Gore population:

Vertex more sharply triangular than in the preceding population, 1.03 (♂) or 1.12 (♀) × as long as broad, 1.11—1.18 × as long as median lenght of pronotum. The last-named 1.7—1.8 × as broad as long medially. Penis (Fig. 7 a—b, d) much as in the preceding population, but apex rounded in ventral aspect.

Ethiopia, W. Gore, 2 exx., Richter & Schäuffele.

General range of the species: Zaire, Ethiopia, E. Africa.

C. rubescens sp.n.

Length 6.5—8 mm. Like *C. declivis* Jac., but 1) body narrower, 2) often with fine red irroration, giving the insect a remarkably reddish appearance, in pale specimens ovipositor sheath and dorsum of abdomen ± red, 1st apical cell usually immaculate or rarely with a small dark dot, 3) upper surface shinier, more distinctly punctate, hair covering sparse, 4) vertex more narrowly triangular, 1.10 (♂) or 1.03—1.15 (♀) × as long as broad, 1.13—1.22 × as long as median length of pronotum, 5) pronotum somewhat narrower, 1.6—1.7 × as broad as long at middle, 6) elytra apically a little more acute and 7) penis (Fig. 5 c, 8 c—e): stem straighter and slenderer in lateral aspect, its apex in ventral aspect short and broadly rounded, plate around gonopore narrower, ± roundedly triangular in outline and apical appendages shorter and thicker, their narrow apical part in broad aspect remarkably short.

In a closely related species, *C. utukurensis* Syn., the plate around the gonopore is much shorter and broader (Fig. 7 c, e, f).

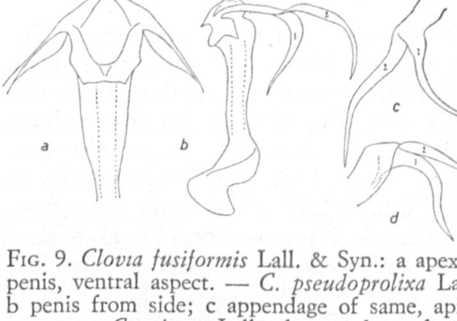

FIG. 9. *Clovia fusiformis* Lall. & Syn.: a apex of penis, ventral aspect. — *C. pseudoprolixa* Lall.: b penis from side; c appendage of same, apical aspect. — *C. minuta* Lall.: d appendage of penis lateral aspect.

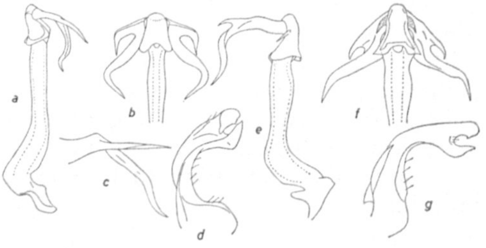

FIG. 10. *Clovia bari* sp.n.: a penis from side; b apex of same, ventral aspect; c appendage of same; d stylus. — *C. kateri* sp.n.: e penis from side; f apex of same, ventral aspect; g stylus.

Equatoria: near Gilo, 1 ♂, type and several paratypes, 18—24. III. 1963; 77, 3 paratypes. On mountain meadows.

C. malmul sp.n.

Length 7.5—8 mm. Ochraceous. Vertex and pronotum with very faint traces of 4 longitudinal brownish bands. Lateral margins of pronotum narrowly dark. Elytra with a faint longitudinal fuscous band in basal part of corium and a small dark spot in 1st apical cell.

Like *C. declivis* Jac., but vertex shorter, 0.86—0.90 × as long as broad, 1.0—1.09 × as long as median length of pronotum. The last-named 1.7—1.8 × as broad as long at middle. Penis (Fig. 5 b, 8 a—b): stem remarkably gracile and straight in lateral aspect, its apex broadly rounded in ventral aspect, plate around gonopore small and broad, its ventral margin truncate, apical appendages with a thin claw-like basal process.

53, 1 paratype; R. Malmul- Tonj, 1 ♂, type and 2 paratypes, 21—22. II. 1963. In swampy meadows.

CORDIA St.

C. peragrans St.

A polymorphic species with a considerable variability in the length of the vertex and in the structure of the male genitalia (SYNAVE 1957 b: 83—135). Since the different forms, named only with letters by SYNAVE, also occur together and are nevertheless well distinguished from each other, I regard them as separate subspecies. At any rate the variability does not seem to be merely individual.

C. peragrans peragrans St.

Head relatively broadly rounded, vertex 2.25—2.33 × as broad basally as long, 0.70—0.73 × as long as median length of pronotum. Genital plates (Fig. 11 a): apex relatively long, upcurved, a distinct although rounded subapical lobe present. Stylus (Fig. 11 j): curvate, much broader than in the other forms, subapical tooth far from apex. Penis (Fig. 12 d—e): strongly flattened, lamellose.

Several exx. from 72—74; 70 and 73—75. In dryish meadows.

Other material: S. Africa, N. Transvaal, Louis Trichard, 1 ex., Capener, my collection.

C. peragrans St. ssp. *iambe* ssp.n.

Remarkably robust, length 6—6.5 mm., body 2.5—2.6 × as long as broad (the other forms more slender, body about 2.8 × as long as broad). Crown remarkably short and broad, often of nearly uniform length (as in *C. rotundiceps* Lall.), 2.3—2.56 × as broad basally as long, 0.61—0.7 × as long as median length of pronotum. Genital plates (Fig. 11 b—c) much as in the nominate form, but subapical lobe more distinct, ± sharply triangular. Stylus (Fig. 11 k) slender. Penis long and moderately flattened (Fig. 12 g).

63—62, 5 paratypes; Loka forest, 1 ♂, type, 8—10. IV. 1963; 66—67, 1 paratype. In swamps.

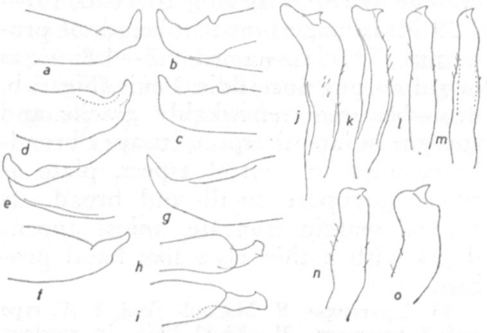

FIG. 11. *Cordia peragrans* St. (Lalyo): a apex of genital plate; j stylus. — *C. peragrans* St. ssp. *iambe* ssp.n.: b, c and k same. — *C. peragrans* St. ssp. *ianeira* ssp.n. (Ibba-Yambio): d, e, l and m same (m Malmul-Tonj). — *C. peragrans* St. ssp. *ianassa* ssp.n. (Yemen): g, n and o same (o from Arusha-Ju). — *C. iphis* sp.n.: f apex of genital plate. — *C. ianthe* n.sp.: h—i same.

C. peragrans St. ssp. *ianeira* ssp.n.

An intermediate between ssp. *ianassa* and the nominate form. Like the nominate form, but vertex somewhat longer, ± angularly produced, 2.0—2.17 × as broad basally as long, 0.7—0.74 × as long as median length of pronotum. Genital plates (Fig. 11 d—e, 13 e—f) much as in the nominate form, but subapical lobe more indistinct, rounded. Stylus (Fig. 11 l—m) mainly as in ssp. *ianassa*, but usually, especially in the Lalyo population, considerably slenderer; in the Lake Maleit population (Fig. 13 g) resembling that of the nominate form, but much thinner. Penis (Fig. 12 h—i, 13 h) with apical part tubulous.

R. Malmul-Tonj, 1 ♂, type and many paratypes, 21—22. II. 1963. Many paratypes from 46; 53; 58; 51; 52; 72—74; 70. Mainly in shore meadows.

C. peragrans St. ssp. *ianassa* ssp.n. (= form A of SYNAVE)

Narrower than the other forms. Upper surface often with minute reddish irroration on vertex and thorax, elytral veins often tinged with the same colour. Vertex long, distinctly angularly produced, 1.71—1.80 × as broad basally as long, 0.82—0.87 × as long as pronotum. Genital plates (Fig. 11 g) with a long, shallowly curvate apex, subapical lobe absent. Stylus as in Fig. 11 n, o. Penis (Fig. 12 f) strongly curvate, apical portion tubulous.

East Africa, Arusha-Ju, Katona, 1 ♂, type, XII. 1905, my collection.

Yemen, Wadi Sabir, N. face of Jebel Sabir, many paratypes, 19. XII. 1937, Scott & Britton, British Museum and my collection.

Three females from Equatoria, 78—79, may also belong to this form.

C. *iphis* sp.n.

Length 5.5 mm. Like *C. peragrans peragrans* St., but somewhat darker. Pronotum and scutellum with a distinct pale median stripe. Crown roundedly angularly produced, 2.0—2.26 × as broad basally as long, 0.73 × as long as median length of pronotum. Genital plates as in Fig. 11 f. Stylus (Fig. 12 a—b) with a large subapical tooth, apex of stylus therefore roughly T-shaped. Penis (Fig. 13 a—b) long, provided with a membraneous foot-shaped apical part, stem with a triangular lobe on either side of ventral surface.

Equatoria, near Gilo, alpine zone, 1 ♂, type and many paratypes, 18—24. III. 1963; 78—79, 1 paratype. In mountain meadows.

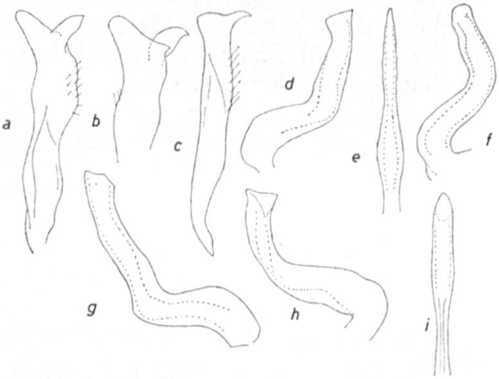

FIG. 12. *Cordia iphis* sp.n.: a—b stylus. — *C. ianthe* sp.n.: c same. — *C. peragrans* St. (Lalyo): d penis, lateral aspect; e same, ventral aspect. — *C. peragrans* St. ssp. *ianassa* ssp.n. (Yemen): f same, lateral aspect. — *C. peragrans* St. ssp. *iambe* ssp.n. (Ibba-Yambio): g same. — *C. peragrans* St. ssp. *ianeira* ssp.n. (Ibba-Yambio): h same; i same, ventral aspect.

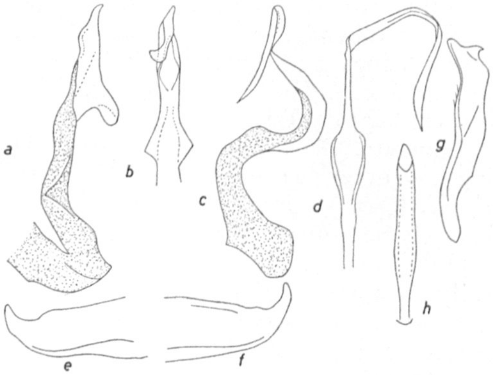

FIG. 13. *Cordia iphis* sp.n.: a penis; lateral aspect; b apical part of same, ventral aspect. — *C. ianthe* sp.n.: c and d same. — *C. peragrans* St. ssp. *ianeira* ssp.n. (Lake Maleit): e—f apex of genital plate; g stylus; h penis, ventral aspect.

C. *ianthe* sp.n.

Length 5.25 mm. Like *C. peragrans* St. ssp. *ianeira* Lv., but smaller. Vertex twice as broad basally as long, 0.73 × as long as median length of pronotum. Genital plates (Fig. 11 h—i) with a relatively straight and thick apical process (digitate in *peragrans* and *iphis*). Stylus (Fig. 12 c) resembling a bird's head. Penis (Fig. 13 c—d) long and strongly S-shaped, apex with a long flagellate membraneous process.

Yemen, 1 ♂, type, my collection.

MACHAEROTIDAE

Recently revised by MAA (1963).

Enderleiniinae

ENDERLEINIA Schm.

E. bispina Schm. — 72, 1 ex.; 74, 1 ex. W. Africa (Togo, Ivory Coast etc.), Uganda.

PECTINARIOPHYES Kk.

P. lotuko sp.n.

Length 7.5 mm. Olivaceous. Sides of frontoclypeus broadly darkened. Vertex and anterior margin of pronotum yellow-brown, disk of pronotum green. Scutellum yellow-brown. Elytra shiny, hyaline, tinged with yellowish, apex slightly brownish; numerous brown setigerous tubercles present especially in veins, being sparse in cells, fairly dense in costal cell. Under surface yellowish brown. Legs darker.

Elongate. General structure, puncturing and other features as in *P. hyalinipennis* (St.) (= *Hindola fasciata* Lall.), but elytra more distinctly punctate, slightly narrower and more pointed apically. Male genitalia: Sclerified black appendage of pygophore (Fig. 14 e) shorter and considerably expanded apicad. Genital plates (Fig. 14 f) narrower. Apophysis of stylus (Fig. 14 g) broader. Penis (Fig. 14 h) more gracile.

Equatoria: Lotti forest, 1 ♂, type, 14—17. III. 1963.

Material of *P. hyalinipennis* (St.) studied from South Africa, N. Transvaal, Letaba Valley and Natal, Umtentweni, several exx., Capener leg., in my collection. Genitalia of *P. hyalinipennis* in Fig. 14 a—d.

P. jur sp.n.

Length 5.5—7 mm. Yellow-brown. Sides of frontoclypeus darkened. Elytra rather coriaceous, tinged with brownish yellow, apex more brownish, base of costal margin darker brown. Femora and tibiae sometimes partly embrowned.

Small and rather robust. Head 0.83—0.9 × as broad as pronotum (0.93 × in the preceding species). Frontoclypeus more convex than in the other species. Crown medially distinctly longer than near eyes (of uniform length in the other species), median length 0.27—0.28 × as long as total length of pronotum (0.21 × in *lotuko*), 0.50—0.52 × as long as broad (0.38 × in *lotuko*), supra-antennal triangles broader, not scored. Puncturing of pronotum and scutellum finer and denser. Elytra shorter and broader, coarsely punctate save apically, without dark tubercles. Male genitalia in Fig. 15 a—d. Penis thicker and shorter than in the other species.

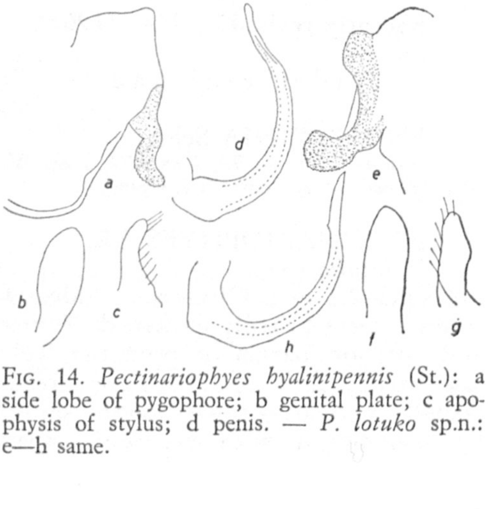

FIG. 14. *Pectinariophyes hyalinipennis* (St.): a side lobe of pygophore; b genital plate; c apophysis of stylus; d penis. — *P. lotuko* sp.n.: e—h same.

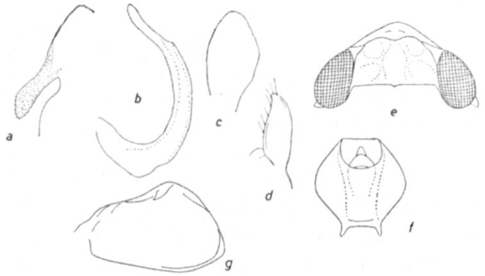

FIG. 15. *Pectinariophyes jur* sp.n.: a side lobe of pygophore, b penis; c genital plate; d apophysis of stylus. — *Benamatapa hecate* sp.n.: e head; f anal tube; g stylus.

39, 1 paratype; Bahr el Ghazal: Wau, 1 ♂, type and several paratypes, 19. II. 1963; 72, 1 paratype.

MEMBRACIDAE

OXYRHACHIS Gm.

O. tricarina Cp. — 79, alpine zone, 1 ex. Endemic.

O. hera Cp.? — 21, 1 ex. On *Acacia*. Probably Eremian, known from W. Africa. I also have it from Eritrea.

O. versicolor Dist. — 9, 1 ex.; 17, 1 ex. Found on *Tamarix* in Israel. Eremian.

XIPHOPOEUS St.

X. phantasma (Sgn.) — 77, 3 exx. W. Africa (Calabar), Central Africa.

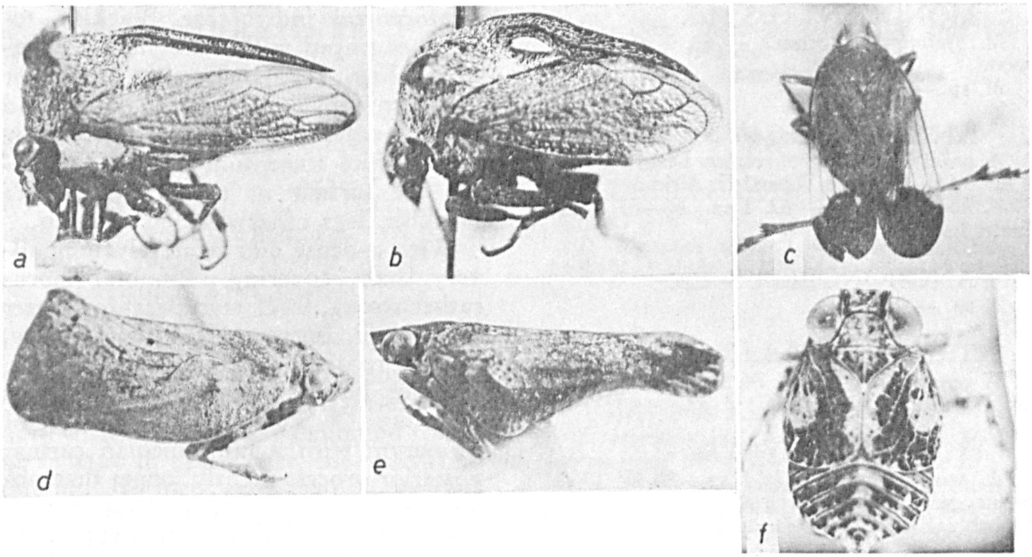

FIG. 16. *Leptocentrus indigoferae* sp.n.: a. — *Acanthophyes mimus* sp.n.: b. — *Philotheria circe* sp.n.: c. — *Juba barchanorum* sp.n.: d. — *Stenocyarda salsolae* sp.n.: d. — *Adenissus brachypterus* gen et sp.n.: f.

LEPTOCENTRUS St.

L. indigoferae sp.n.

Figs. 16 a, 17 a. Length ♂ 5.25 mm., ♀ 5.7—6 mm. Blackish, partly with a ferrugineous tinge. Elytra hyaline, apex, ± brownish smoky, veins yellowish or dark brown. Genae, sides of thorax and base of scutellum white owing to very white tomentum totally concealing the surface. Femora dark ferrugineous, legs otherwise yellowish brown.

Upper surface with a dense and relatively long silvery hair covering. Pronotal horns strongly protruding, in apical view obliquely curved dorsad, in dorsal view recurved apically caudad; distance between the ends of the horns 3,98 mm. (♂) or 3.90—4.35 mm. (♀). Disk of pronotum with a faint longitudinal median carina; posterior process long and sharp, shallowly curved ventrad apically, provided with a sharp median ridge. Scutellum with a U-shaped apical notch. Elytra somewhat longer than abdomen, veins with two rows of semi-erect silvery setae. 7th sternite (♀) with a broad and deep U-shaped median insinuation.

Yemen, W. of Ta'izz, on road to Mocha, 1 ♂, type and several paratypes, 20. XII. 1937, Scott and Britton, British Museum, paratypes also in my collection. On *Indigofera oblongifolia.*

OTINOTUS Bck.

O. shoanus Dist. — 36—40, 1 ex. Ethiopia.

STALOBELUS Cp.

S. africanus (Dist.) — 62, 2 exx. Zaire, E. Africa.

SPALIRISES Dist.

S. gracilis Cp. — 79, 1 ex.; 77, 2 exx. Endemic.

JACOBIANA Cp.

J. alticornis (Jac.) — 79, 2 exx.; 77, 1 ex. E. Africa, Zaire.

DACONOTUS Cp.

D. patricius Cp. — 79, 1 ex. Endemic.

EUMONOCENTRUS Schm.

E. seydeli Cp.? — 62, 1 ex. Zaire.

MONOCENTRUS Mel.

M. hyalinipennis Schm.? — 68, 1 ex. Cameroon.

M. sp. — 66—67, 1 ex.

ANCHON Bck.

A. proximus (Sgn.) (= *relatum* Dist.) 72—71, 3 exx.; 81—82, 1 ex. W. and E. Africa.

A. honoratus Cp. — 62, 1 ex.; 66—67, 1 ex. Endemic.

ANCHONOBELUS Cp.

A. sp. — 74, 1 ex.

TRICOCEPS Bck.

T. geniculatus (St.) — 74, 2 exx.; 62, 1 ex. W., E. and S. Africa, Zaire.

ACANTHOPHYES St.

A. tassilii Bgv. — 17, 1 ex., 20. IV. 1964, Meinander; 72—71, 3 exx.; 68, 1 ex. On *Acacia.* Probably Eremian, previously known from the Sahara.

A. maculipennis Cp. — 6, 1 ex.; 9, 1 ex. On *Acacia.* Eremian (Air Sud).

A. linnavuorii Cp. — 24—24 a, 1 ex.; 72, 1 ex.; 72—71, 4 exx. On *Tamarindus indicus.* Endemic.

A. mimus sp.n.

Figs. 16 b, 17 b. Length 4.1—4.2 mm. Colouring and hair covering much as in *Leptocentrus indigoferae.* Blackish, sometimes tinged with ferrugineous. Elytra hyaline, veins yellowish brown or dark brown. Genae, sides of thorax and base of scutellum white owing to very dense white tomentum totally concealing the surface of the body. Femora blackish, legs otherwise ferrugineous.

With a dense and relatively long silvery hair covering. Pronotal horns rather strong, in ♂ considerably shorter than in ♀, horizontal in apical view, slightly recurved caudad in dorsal view, distance between apices of the horns 2.55 mm. ♂, 3.0—3.3 mm. ♀. Disk of pronotum with a faint median carina; posterior process slightly longer than abdomen, faintly curved ventrad in profile, with a roundish ventral expansion in the middle and a sharp longitudinal median ridge on the dorsal surface. Apex of scutellum shallowly insinuated. Elytra somewhat longer than abdomen, veins with two rows of semi-erect silvery setae. 7th sternite (♀) deeply and broadly insinuated down to base.

Yemen, Usaifira, near Ta'izz, 1 ♂, type and many paratypes, 13. XII. 1937, Scott and Britton, British Museum, paratypes in my collection. On *Indigofera oblongifolia.*

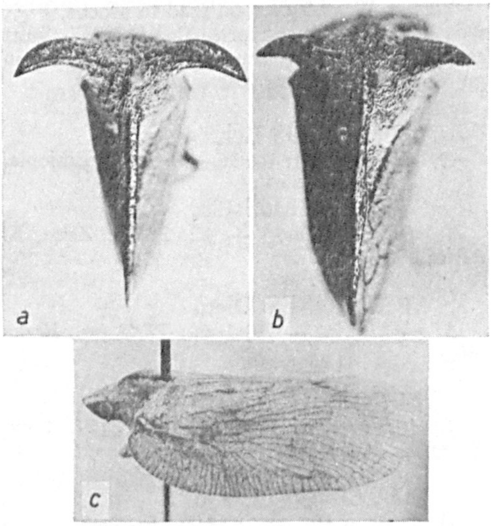

FIG. 17. *Leptocentrus indigoferae* sp.n.: a dorsal view. — *Acanthophyes mimus* sp.n.: b same. — *Flatosaria dhalaica* sp.n.: c.

DISTANTOBELUS Cp.

D. gratus Cp. — 52, 1 ex. Endemic.

BLECCIA Cp.

B. obscurus Cp. — 25, 2 exx. Endemic.

HAMMA Bck.

H. spinosum Cp. — 62, 1 ex. Central Africa.

GARGARA A.—S.

G. escalerai Pel. — 77, 1 ex.; 66—67, 1 ex. Fernando Poo.

G. nyanzai Funkh. — 62, 1 ex. E. Africa.

G. perpolita Dist. — 68, 1 ex. Liberia, Ruanda, E. Africa.

FULGORIDAE

Recently revised by LALLEMAND (1959).

Xosopharinae

OMALOCEPHALA Spin.

O. cincta (F.) — 26, 2 exx.; 22—25, 1 ex.; 23,1 ex. Equatoria, Mongalla, (FENNAH 1957: 111). W. Africa.

Aphaeninae

BENAMATAPA Dist.

B. hecate sp.n.

Length 8.5 mm. Dark brown. Face yellowish brown, frons with dense dark irroration; clypeus with less dense irroration, with a pale, poorly delimited transverse band in upper part, the band continuing, distinct and well delimited, across sides of thorax. Upper surface of head and thorax mainly dark brown, with minor pale irroration, especially on vertex, at sides of pronotum and at apex of scutellum; median carina of pronotum pale. Elytra remarkably pale, yellowish brown, with only minute and scanty dark spots, the most distinct spots in clavus and along costal margin of corium, veins concolorous. Flying wings basally reddish, medially hyaline, apex dark brown with some larger and smaller dark spots in mediomarginal area. Legs yellowish brown, with ± dense brown irroration. Fore and middle tibiae with a distinct pale ring.

A small species, resempling *B. electa* (Schm.) in general structure. Frons 1.25 × as long (total length) as broad, or as long (median length) as broad. Vertex (Fig. 15 e) roundedly triangular, about 1.4 × as broad as long. Stylus and anal tube as in Fig. 15 f—g.

Resembling *B. electa* (Schm.), but differing in the smaller size, the broader vertex and the dissimilarly shaped anal tube (description of *electa* in LALLEMAND 1959:61—62). *B. schubotzi* (Mel.) is also bigger, the elytra are distinctly marked with black (e.g. with two irregular dark transverse bands) and the genitalia are as in *B. electa.*

Blue Nile: Ingessana Mts., 1 ♂, type, 17—22. XI. 1962. At lamp.

Enchophorinae

DRUENTIA St. (= *Apessoda* Schm.)

D. togoensis (Schm.) — Kordofan, Delami (coll. Wad Medani). W. Africa (Togo).

Zaninae

ZANNA Kk.

Z. orientalis Lall. — LALLEMAND (1959:103) has recorded the following finds: Northern Province: Aboukamed. Equatoria: Lado; Marno; Wadai. The following records of *Z. flammea* (L.) in coll. Wad Medani apparently refer to *orientalis:* Upper Nile: Bor; Adok; No; Nuer; Shambe. I collected a large amount of larvae from 74 that possibly belong to this species. Endemic.

Z. tenebrosa (F.) — Upper Nile: Aburri (coll. Wadi Medani as *Z. natalensis* Dist., a synonym of *tenebrosa).* W. Africa, Congo, E. and S. Africa, Madagascar.

DICTOPHARIDAE

Recently treated by FENNAH (1957) and SYNAVE (1965).

DORYSARTHRUS Pt.

D. alfierii Bgv. — 6, several larvae probably

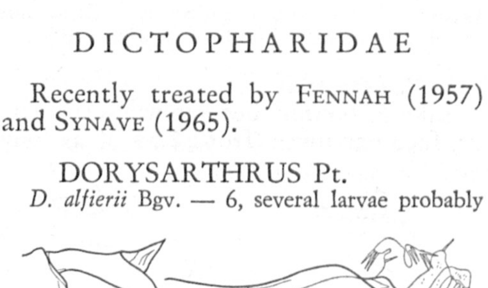

FIG. 18. *Paranagnia tumida* Mel. (Ingessana Mts.): a genital segment from side; b penis from side; c same, dorsal aspect (the membraneous apical processes omitted); d phallic appendage; e penis (another specimens) from side.

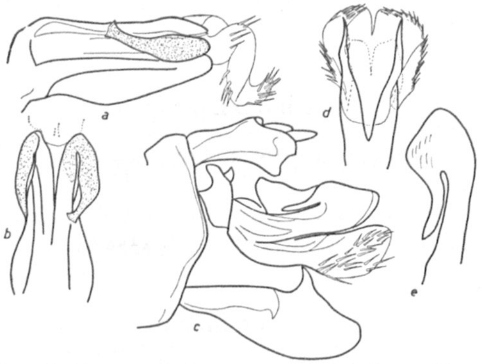

FIG. 19. *Paranagnia lyco* sp.n.: a penis from side; b same, ventral aspect. — *P. aethiopica* Mel. (Borama): c apex of abdomen from side; d penis, dorsal aspect; e phallic appendage.

of this species; 10, 1 larva; 43, 1 ex. Eremian (Egypt).

PARANAGNIA Mel.

P. tumida Mel.

Male genitalia as in Fig. 18 a—e.

Khartoum, type of *tumida,* Mus. Vienna; 26, 3 exx.; 22—25, 2 exx.; 39, 1 ex., Wilson, Mus. Oxford. Sudan. Also recorded from Zaire, but possibly confused with the following species.

P. lyco sp.n.

Like *P. tumida,* but somewhat slenderer, face narrower (frons 2.54 × as long at the middle as greatest width, 2.17 × in *tumida),* elytra shinier and penis (Fig. 19 a—b) much stouter, with the hooks of the phallic appendages much longer and expanded apically and with more numerous spines in the membraneous apical lobes.

Zaire, Elisabethville, 1 ♂, type, Seydel, in my collection.

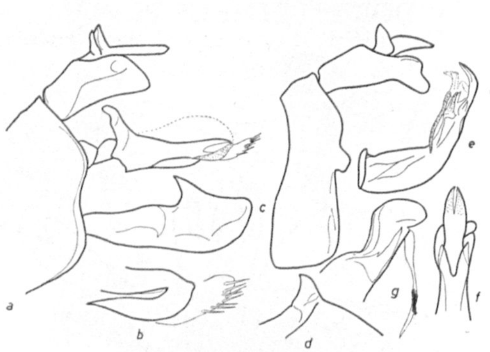

FIG. 20. *Paranagnia afra* St. (Singa-Damazin): a apex of abdomen from side; b phallic appendage and membraneous spiniferous apical lobe of penis. — *Hasta ufudensis* Mel. (Ingessana Mts.): c pygophore and anal tube from side; d lobe of dorsal margin of stylus; e penis from side; f apex of same, ventral aspect; g phallic appendage.

P. aethiopica Mel.

Male genitalia as in Fig. 19 c—e.

Material studied Somalia, 124, 1 ex. and 125, 1 ex. previously known from S. Ethiopia.

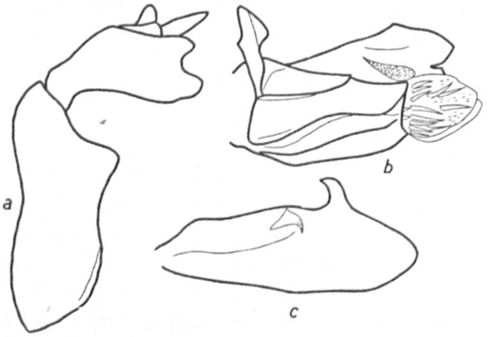

FIG. 21. *Hasta ogadensis* Mel. (Umm Banein): a pygophore and anal tube from side; b penis; c stylus.

P. afra (St.)

Male genitalia as in Fig. 20 a—b.

26, 5 exx.; 22—25, 4 exx.; 23, 1 ex.; 21, 1 ex.

Other material studied: Senegal, 1 ♀, type of *afra,* coll. Signoret, Mus. Vienna. Known from Senegal, Zaire and Somalia.

HASTA Kk.

H. ufudensis Mel.

Male genitalia as in Fig. 20 c—g.

26, many exx.; 30 km N of 71, 1 ex. E. Africa.

H. ogadensis Mel.

Male genitalia as in Fig. 21 a—c.

26, 1 ex.; 23, 3 exx.; 84, 1 ex. E. Africa.

PHILOTHERIA Mel.

I have previously (1962:5—12) drawn attention to difficulties in defining the genera *Dictyophara* Gm. and

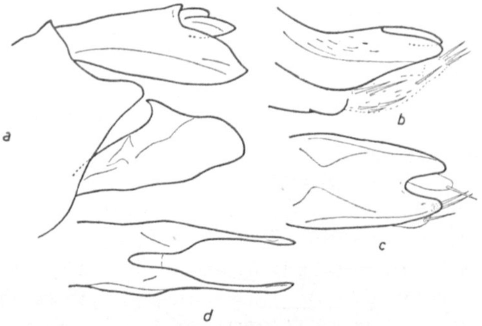

FIG. 22. *Philotheria proxima* (Mel.): a genital segment from side; b penis, lateral aspect; c same, dorsal aspect; d phallic appendage.

Chanithus Klti. SYNAVE (1965:4—26) has recently published a revision of the genus *Philotheria* Mel. including in it *Dictyophara proxima* Mel., a species of the *striata* group. This group differs from typical *Dictyophara* and *Chanithus* in the presence of the red bands on the frons and on the pronotum and in the development of dark pigment, visible at least in the dark longitudinal stripes of the legs and often also in the darkening of the veins of the apical part of the elytra. In view of the treatment of SYNAVE, the other species of the group *striata* Osh. (= *unicolor* Sgn. *v. vittata* Pt.), *proxima* Mel., *insculpta* Wk., *sinica* Wk., *iranica* Lv., *pallida* Don., *graminea* F., *nakanonis* Mats. (a possible synonym of *graminea)* and *avocetta* Osh.) should also be transferred to *Philotheria.* A general revision of *Dictyophara*, *Chanithus* and *Philotheria* is needed to establish whether the differences between them are of real generic value. I have already pointed out (1962) that the shape of the head does not differ sharply between *Dictyophara* and *Chanithus.* This character also varies in *Philotheria,* which contains species with a short and ± triangular head (e.g. *choraules* Fenn.). The absence of dark pigment in *P. avocetta* should also be noted. *Philotheria* most probably originated in tropical Africa, from where it radiated into the Oriental region and the Eremian subregion. It seems to be the most primitive group, from which both the *Chanithus* and *Dictyophara* groups have evolved.

P. striata (Osh.) — 6, 1 ex. Eremian (N. Africa—Turkestan).

P. proxima (Mel.)

Male genitalia (Fig. 22) much as in *striata,* but anal tube extending far beyond pygophore in lateral aspect and rather narrowly ovate, much longer than broad in dorsal aspect (in *striata* much broader, slightly shorter than broad). Dorsal apical incisure of penis narrower.

17, several exx., 20. IV. 1964, Meinander. Previously known from Eritrea.

P. lineata (Muir)

Apical prolongation of head in front of eyes 6 × as long as eye.

26, 1 ex. W. Africa (Ivory Coast), Zaire.

P. validirostris (St.)

Apical prolongation of head in front of eyes 4.65—4.8 × as long as eye.

25, 1 ex.; 63—62, 1 ex.; 62, 5 exx. Previously known from W. Africa and Tanganyika.

P. nexa Mel.

Apical prolongation of head in front of eyes 3.65 × as long as eye.

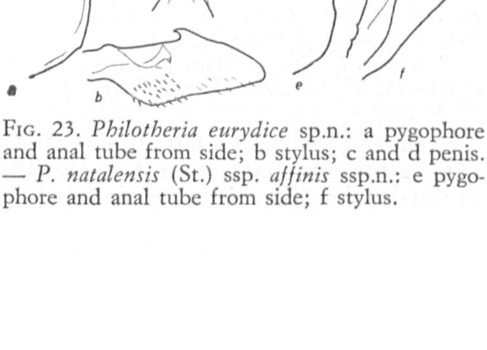

FIG. 23. *Philotheria eurydice* sp.n.: a pygophore and anal tube from side; b stylus; c and d penis. — *P. natalensis* (St.) ssp. *affinis* ssp.n.: e pygophore and anal tube from side; f stylus.

24—24 a, 1 ex. Known from W. Africa. (Ivory Coast), Zaire and Uganda.

P. eurydice sp.n.

Length 12.5—14.5 mm. Orangish brown. Base of vertex with two faint orangish bands and a pale median carina. Frons with two reddish longitudinal bands, keels greenish; apex of head green, with a few black dots, the most distinct of which is just at apex. Pronotum and scutellum orangish, keels white. Elytra hyaline, stigma dark; veins yellowish, partly green, apical veins dark. Legs with dark longitudinal stripes, tibial spines black-tipped.

Resembling *P. talassio* Fenn. Head of the same shape; vertex 6.0—6.4 × as long as broad, nearly straight in profile, median keel faint, medially almost evanescent. Frons slightly concave in profile, keels distinct. Median keel of pronotum distinct, lateral keels of median area marked only by whitish, somewhat callose stripes, side keels distinct, disk with two small round pits. Scutellum with 3 median keels. Venation of elytra as in *talassio*. Hind tibiae with 5 lateral spines. Male genitalia as in Fig. 23 a—d.

Very close to *P. decellei* Syn. (Ivory Coast), but the subapical dorsal spines of the penis grouped in a longitudinal row on either side with 4—6 spines in each, whereas they arise from an irregular transverse row and are less numerous in *decellei* as figured by SYNAVE (1965:16).

51, 1 paratype; Wau, 1 ♂, type and 2 paratypes, 19. II. 1963.

P. pandion Fenn. — 24—24 a, 2 exx.; 21, 1 ex. Previously known from Senegal.

P. apicata Mel. — Many exx. from 24—24 a, 22—25; 23; 84; 85—84; 33—34. Also recorded from 9 (FENNAH 1957:60). E. Africa.

P. natalensis (St.) — Many exx. from 24—24 a; 22—25; 23; 62. Zaire, E. and S. Africa.

P. natalensis (St.) ssp. *affinis* ssp.n.

Like the nominate form, but 1) apex of anal tube (Fig. 24 e) insinuated in lateral aspect (indicated with an arrow in the figure), 2) apex of stylus (Fig. 24 f) slightly insinuated and 3) the membraneous, spiniferous apical lobes of penis close to each other, whereas strongly diverging laterad in the nominate form. The genitalia of the nominate form figured in FENNAH (1957:63).

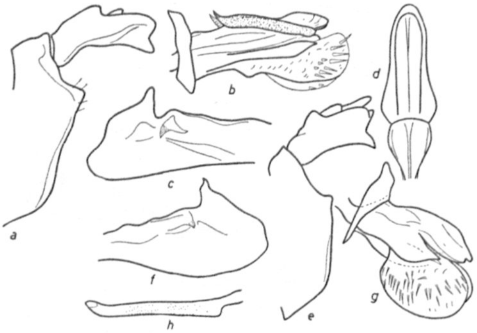

FIG. 24. *Philotheria antigone* sp.n.: a pygophore and anal tube from side; b penis; c stylus. — *P. circe* sp.n.: d frons; e pygophore and anal tube from side; f stylus; g penis.

Equatoria: Kateri-Gilo, 1 ♂, type, 18. III. 1963.

P. antigone sp.n.

Length 10—13 mm. Yellow-brown. Frons with two dilute orangish bands. Sides of head with some small dark spots apically. Elytra hyaline, apex ± embrowned (in dark specimens entire apex brown, but the brown colour often ± discontinuous and also varying in intensity), stigma always dark; veins yellow-brown, apically darker. Venter pale. Femora with fine brown spotting, tibial spines black-tipped.

Shape of head almost as in *P. lineata* (Muir). Vertex nearly parallel-sided, 3.5—4.0 × as long as broad, 3.25 × as long as eye, a faint median keel present. Apical prolongation of head in front of eyes 2.33—2.45 × as long as eye. Frons shallowly concave in profile; the area between the median keels narrowest near clypeus, otherwise of ±

equal breadth. Pronotum with 3 median keels, the lateral ones being somewhat less pronounced. Scutellum with 3 distinct keels. Stigma consisting of 4 or 5 cells Hind tibiae with 5 lateral spines. Male genitalia as in Fig. 24 a—c. 6th ventrite of ♀ without teeth.

P. transvaaliensis (Dist.) is a closely related species. In it the area delimited by the median keels of the frons narrows distinctly upwards and the 6th ventrite is provided with two triangular lobes (FENNAH 1957:59). It differs from *P. damon* Fenn. in the somewhat longer head and very dissimilar penis.

24—24 a, 3 paratypes; 25, 2 paratypes; 26, several paratypes; Singa- Damazin, 1 ♂, type, 15—17. XI. 1962; 23, 2 paratypes. Also found in Somalia, 125, 1 paratype.

P. circe sp.n.

Fig. 16 c. Length 7 mm. Yellowish brown. Head somewhat paler. Apex of clypeus blackish, an obscure pale band extending across base of clypeus to lower margin of propleurae. Elytra hyaline, apex (= the reticulated area) uniformly blackish brown, the colour limit sharp; stigma, excluding the extreme apex, hyaline; veins of the hyaline area yellow-brown. Flying wings hyaline, apex dark brown. Under surface ± broadly marked with dark brown. Legs yellowish brown, with distinct blackish longitudinal stripes in femora and tibiae, tibial spines black-tipped.

Small and rather robust. Vertex narrowly conical, tapering gradually apicad right from base, 1.38—1.4 × as long at middle as broad, 1.15 × as long as eye and 0.46 × as long as pronotum and scutellum together; lateral margins upturned, median carina evanescent in apical fourth. Frons (Fig. 24 d) considerably expanded at antennae, lateral margins distinctly sinuated, the 3 longitudinal median keels distinct but not sharp. Clypeus with a sharp median keel. Pronotum with a median carina and a round pit on either side of it, lateral median keels absent, lateral keels behind eyes faint. Keels of scutellum relatively faint. Elytra about 3 × as long as broad, stigma consisting of 3 cells. Hind tibiae with 5 lateral spines. Male genitalia as in Fig. 24 e—h.

Differs greatly from the other species, e.g. in the bicoloured elytra and the short vertex.

Blue Nile: Ingessana Mts., 1 ♂, type and 1 ♀ paratype, 17—22. XI. 1962.

DICTYOPHARA Gm.

D. eremica Lv. — 17, 1 ex., 29. X. 1962, Panelius. Eremian. Previously known from Israel.

AFRONERSIA Fenn.

A. impicta Fenn. (= *junix* Fenn., *comus* Fenn.) — 62, 1 ex. Zaire.

A. discrepans Fenn. (= *proclivis* Fenn., *juba* Fenn.) — 66—67, 1 ex.; 66—64, 1 ex. Zaire.

A. clymene sp.n.

Length 11 mm. Yellowish, probably green in life. Keels of head and of thorax somewhat paler. Elytra hyaline, veins green. Under surface and legs pale greenish, tibial spines black-tipped.

Resembling *A. katangana* Fenn. (FENNAH 1957:83—86) in the sharply triangular vertex. Vertex 2.5 × as long at

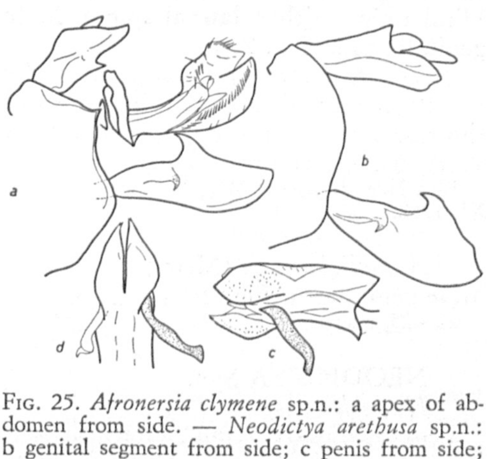

FIG. 25. *Afronersia clymene* sp.n.: a apex of abdomen from side. — *Neodictya arethusa* sp.n.: b genital segment from side; c penis from side; d same, dorsal aspect (the chitinized appendage stippled).

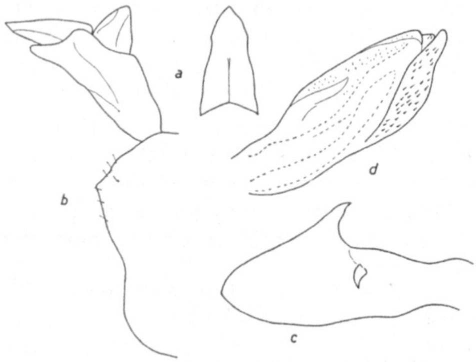

FIG. 26. *Afronersia melichariana* (Metc.): a vertex; b anal tube and pygophore from side; c stylus; d penis.

middle as broad, sharply triangular; lateral margins somewhat upturned, median keel faint, evanescent in apical half. Frons long and narrow, in upper third sharply triangular in outline, otherwise parallel-sided, keels nearly parallel, distinct. Clypeus with a sharp median keel, lateral margins upturned. Pronotum with a median carina and a depression on either side of it, the lateral median keels absent, the lateral carinae well developed, the upper one being the sharpest. Tegulae with a whitish, callose carina. Stigma consisting of 3 cells. Hind tibiae with 4 lateral spines. Male genitalia as in Fig. 25 a.

Near *A. katangana* Fenn., but the vertex shorter, all elytral veins pale and the side lobes of the pygophore with a short, triangular projection.

Blue Nile: Ingessana Mts., 1 ♂, type, 17—22. XI. 1962.

A. melichariana (Metc.)

Male genitalia in Fig. 26 a—d.
22—25, many exx. E. Africa.

NEODICTYA Syn.

N.arethusa sp.n.

Length 9.5—10.5 mm. Greenish yellow. A series of small blackish spots along sublateral frontal carinae in their basal third and along basal margin of frons. Elytra hyaline, veins green. Tibial spines black-tipped.

Resembling *N. currax* (Fenn.) (FENNAH 1957:86—87). Vertex turbinate, 0.9 × as long at middle as broad, lateral margins very slightly converging distad between eyes, then strongly incurved and uniting smoothly with apical margin without angular junction; disk with two shallow impressions, distinct median carina present in the basal half. Frons much as in *P. currax*, broadening slightly downwards, flat, microsculptured, distinctly carinate. Clypeus with a distinct median carina. Pronotum with only a median carina, the two lateral carinae behind eyes distinct, the carina in the lateral lobes evanescent. Tegulae ecarinate. Stigma with 4 or 5 cells. Hind tibiae with 5 lateral spines. Male genitalia as in Fig. 25 b—d, caudal margins of side lobes of pygophore smoothly rounded, penis with a sclerified and a membraneous appendage.

Easily distinguished from *N. currax* by the male genitalia.

Blue Nile: Ingessana Mts., 1 ♂, type and 1 ♀ paratype, 17—22. XI. 1962.

PHAENODICTYON Fenn.

P. ellipticum (Wk.) — 77, 2 exx.; 62, 1 ex. Zaire.

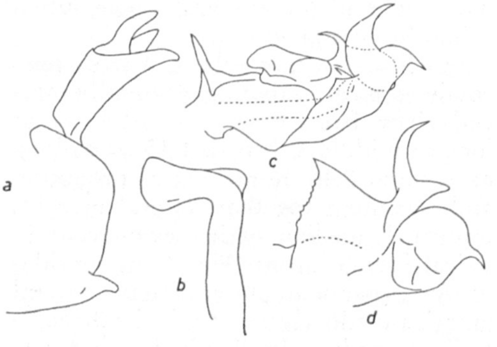

FIG. 27. *Andes aulonias* sp.n. a anal tube and pygophore from side; b stylus; c penis from side; d apical process of same, ventral aspect.

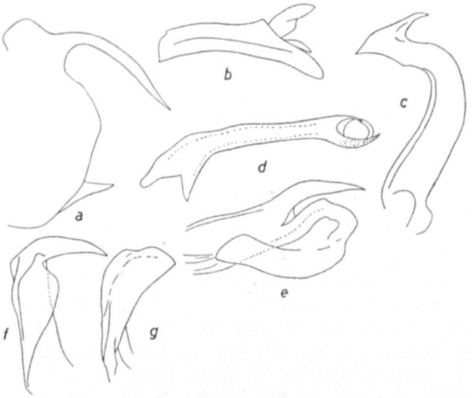

FIG. 28. *Andes dryas* sp.n.: a pygophore; b anal tube; c stylus; d—e penis. — *Oliarus pallens* (F.): f lateral lobe of aedeagal sheath. — *O. sudanicus* Lall.: g same.

PSEUDOPHANELLA Fenn.

P. regina Fenn. — 26, 2 ♀♀ probably of this species. Zaire, E. Africa (Lake Eduard).

P. regina Fenn. ssp. *sollennis* Fenn. — 77, 1 ex.; 74, 1 ex.; 62, 4 exx.; 66—64, 3 exx. Zaire.

CIXIIDAE

Recently revised by SYNAVE (1953 a and b). Many species also described by FENNAH (e.g. 1957).

ANDES Muir

A. aulonias sp.n.

Length 5—6 mm. Yellowish brown. Head dark brown; the upturned sides of frons pale ochraceous, with alternating dark transverse spots; the upturned lateral margins of vertex with a pale roundish spot. Disk of pronotum and of scutellum dark brown. Elytra hyaline, tinged with yellowish; a dark fuscous transverse band extending from basal angle to commissural margin of clavus and nearly totally filling the basal half of clavus, and a dark fuscous Y-shaped transverse band starting from the middle of costal margin and directed to tip of clavus; apex of elytra also mainly dark fuscous with irregular paler areas, the dark area joined in upper margin to the Y-shaped band; veins mainly pale, densely, minutely and darkly tuberculate. Legs yellow-brown.

General structure as in *A. oldi* Muir, but scutellum considerably shorter. Male genitalia (Fig. 27): Pygophore symmetric, unarmed. Anal tube without processes. Stylus axe-shaped. Penis very stout.

Resembling *A. oldi* Muir, but darker and with dissimilar genitalia.

Equatoria: Loka forest, 1 ♂, type and 1 ♀ paratype, 8—10. IV. 1963.

A. dryas sp.n.

Length ♂ 5.75 mm., ♀ 7.5 mm. Yellowish brown. Head darker, unicoloured. Scutellum medially darker brown. Elytra yellowish brown, with the same dark pattern as in the preceding species, but much fainter; veins densely and darkly tuberculate. Legs yellowish brown.

Resembling the preceding in the body form, but much bigger. Male genitalia characteristic: Pygophore (Fig. 28 a) symmetric, either side lobe with a long, falcate, dorsal appendage directed caudo-ventrad. Anal tube (Fig. 28 b) un-

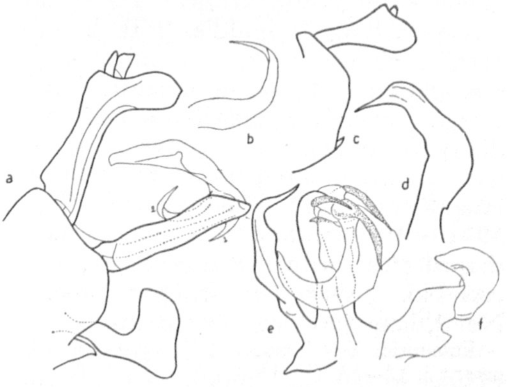

FIG. 29. *Achaemenes hyleorias* sp.n.: a genital segment from side; b appendage No. 2 of penis. — *Oliarus verheyeni* Syn.: c pygophore and anal tube from side; e penis; d lateral lobe of aedeagal sheath; f stylus.

armed. Stylus with apex strongly recurved (Fig. 28 c), expanded, bearing two pointed processes. Penis (Fig. 28 d—e) gracile.

Equatoria: Ylei- Iwatoka, 1 ♂, type and 1 ♀, paratype, 12—13. IV. 1963

ACHAEMENES St.

A. basilewskyi Syn. — 77, 1 ex. Previously known from E. Africa.

A. hyleorias sp.n.

Length ♂ 7.5 mm., ♀ 9 mm. Coffee-brown. Elytra hyaline, slightly tinged with yellowish, apical cells with a fuscous triangular apical spot, a few subapical roundish fuscous spots also present, stigma dark; veins mainly brownish, in places paler, with minute and somewhat darker tubercles. Tibiae and tarsi yellow-brown.

A large species. Face with a sharp median keel. Frons 1.2 × as long at middle as its greatest width, 1.86 × as long as broad as base of clypeus; base sligthly broadening ventrad, then rather strongly expanded at antennae and again tapering towards clypeus, lateral margins upturned. Vertex twice as broad basally as long at middle, anterior margin slightly curvate; apical compartment narrow; basal compartment 2.5 × as broad as long at middle, with lateral margins converging apicad, apical margin straight. Pronotum narrow, basal margin strongly angularly incised medially. Scutellum rather convex, tricarinate, carinae nearly parallel. Hind tibiae laterally unarmed. Male genitalia (Fig. 29 a—b): Anal tube long. Stylus axe-shaped. Penis with two appendages, process No. 1 short and straight, process No. 2, long and strongly curvate.

Equatoria: Yei- Iwatoka, 1 ♂, type and 1 ♀ paratype, 12—13. IV. 1963.

PTOLERIA St.

P. straeleni Syn. — 51, 1 ex.; 52, several exx.; 77, several exx.; 60, 2 exx.; 61—52, 1 ex; 62, 2 exx.; 66—64, 1ex. At lamp. Previously known from Zaire.

OLIARUS St.

O. *sudanicus* Lall.

Oliarus sudanicus Lallemand 1925:4.
Oliarus limbifer Hesse 1925:151—152 sensu Synave 1953 a:26, syn.n.

A sexualy dimorphic species: ♂ usually small and dark, ♀ large and pale. Very close to O. *pallens* (Gm.), but differing in, e.g., the shape of the lateral lobe of the aedeagal sheath (Fig. 28 g).

Many exx. from 7; 2; 9; 24—24 a; 26; 23; 29; 22—25; 23; 21; 84; 30—31; Bahr el Ghazal, R. Malmul, 1 ex., 21—22. II. 1963; 70—72; 74. A common species in mesic biotopes. Often at lamp. Africa S of the Sahara, S. W. Arabia.

O. *verheyeni* Syn.

Close to the preceding, but easily distinguished, e.g. by the colouring of the elytra and the shape of the lateral lobe of the aedeagal sheath. Male genitalia in Fig. 29 c—f.

63—62, several exx.; 77, numerous exx.; 66—67, 2 exx. In swamps. Previously known from Zaire.

O. *moestus* St. group

Close to the *sudanicus* group, but differing in the much shorter and broader vertex. The group consist of the following described species and forms: O. *moestus* St., O. *virgultivagus* Hesse, O. *nigripennis* Syn. O. *nyanzae* Fenn., O. *nyanzae gracilior* Fenn., O. *nyanzae inermis* Fenn. and O. *praeneste* Fenn. In the Sudan two further races were found. All the described forms are very similar in the male genitalia, although the length of the aedeagal spines is somewhat variable. The main differences lie in the size, the shape of the vertex and in the colouring. The taxonomic value of these units is still uncertain and can be solved only by studying a large series of specimens from various parts of Africa. In the Sudan no intermediate forms were found, although *virgultivagus, choaspes,* and *iphis* were obtained together at Malakal, a fact that could indicate specific differences between them.

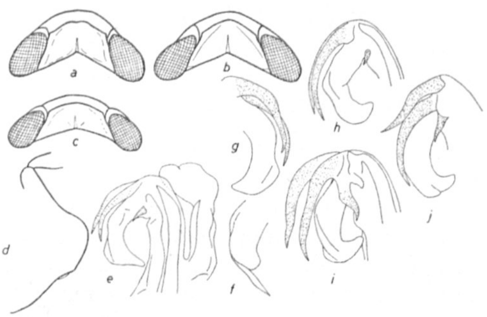

FIG. 30. *Oliarus moestus* St. (Nimule): a head; d pygophore; e penis; g apex of same; f same (Yei-Maridi). — *O. moestus* St. ssp. *virgultivagus* Hesse (Kassala): h penis. — *O. moestus* St. ssp. *choaspes* ssp.n.: b head; i penis. — *O. moestus* St. ssp. *iphis* ssp.n.: c and j same.

O. moestus St.

A small dark form, length 4 mm. General colouring blackish, elytra ± strongly infumed, veins dark. Basal compartment of vertex (Fig. 30 a) 2.0—2.2 × as broad basally as median length. Penis in Fig 30 e—g, spines relatively slender. The short spine No. 3 is not visible in SYNAVE's figures (1953 a: 24), in one specimen apex of penis provided with a short spine (Fig 30 f) as in *O. nyanzae. O. nyanzae inermis* Fenn. could possibly be a synonym of *moestus*, although reported to be somewhat larger in the original description FENNAH 1957:35—36), length 3.2 mm., tegmen 4.0 mm.

72—74, 1 ex.; 68, 1 ex.; 64—63, 1ex.; 74, 1 ex.; 66—64, 2 exx. Recorded from S. and E. Africa and Zaire.

O. moestus St. ssp. *virgultivagus* Hesse

Like the preceding, but bigger, length 5.5 mm, and elytra hyaline, not infumed. In the male from Kassala (the only known male) aedeagal appendages Nos. 1 and 2 are long and slender, and process No. 3 very small (Fig. 30 h).

19, 1 ex.; 84, several exx,; 83, 1 ex. Additional material: S. Africa, E. Transvaal, Karino, 1 ♂, range as in *moestus.*

O. moestus St. ssp. *choaspes* ssp.n.

Length 6.2—8 mm. A dark form resembling *moestus* in the uniformly and usually strongly embrowned elytra, but differing in the much bigger size and in the considerably shorter and broader basal compartment of the vertex (Fig. 30 b) being 2.46—2.76 × as broad basally as long. Aedeagal appendages (Fig. 30 i) Nos. 1 and 2 long and thick, No. 3 also long, and deflected. *O. nigripennis* Syn. (Zaire) is smaller, length 4.5—5.5 mm, and has yellowish setae on the elytra.

Upper Nile: Malakal, 1 ♂, type and many paratypes, 5—20. I. 1963; 74, 1 paratype.

O. moestus St. ssp. *iphis* ssp.n.

Length 5—6 mm. A pale form resembling *virgultivagus* in the entirely hyaline elytra, veins also pale, but distinguished in the remarkably short and broad basal compartment of vertex (Fig. 30 c), which is basally 2.7—3.2 × as broad as long. Penis as in Fig. 30 j, appendage No. I rather short, No. 3 relatively long.

21, several paratypes; 84, numerous paratypes; 35—36, 1 paratype; 32, 1 paratype; Tendelti-Umm Ruwaba, 1 ♂, type and several paratypes, 25.I.1963; 30—31, 1 paratype; 46—45, numerous paratypes; 81—82, numerous paratypes. On *Phragmites.* Common at lamps like the other species of the genus.

O. grossus Lall. — 62, 1 ♀ probably of this species. E. Africa (Ituri).

O. minyarias sp.n.

Length 4.5—5 mm. Dark brown. Lateral margins and median carina of face pale, lower part of lateral margins sometimes more broadly pale in ♂. Margins and carinas of vertex pale. Pronotum pale greyish ochraceous, disk laterally slightly infumed. Carinas of scutellum yellowish brown. Elytra hyaline, slightly tinged with yellow; veins pale, apical cross-veins infuscate, tips of apical veins also slightly so, commissural margin of clavus with a fuscous dash at

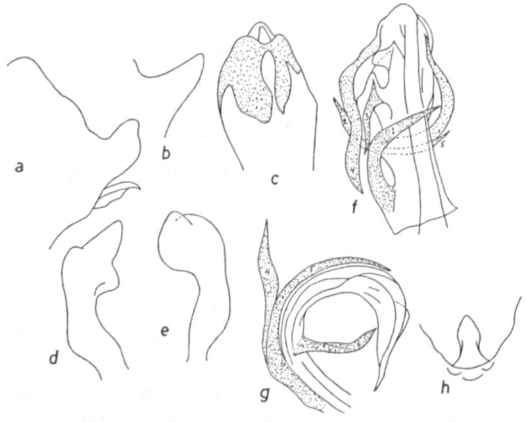

FIG. 31. *Oliarus minyrias* sp.n.: a left, b right side lobe of pygophore; h medio-ventral process of same; c anal tube, ventral aspect; d—e styli; f—g penis.

end of claval vein, veins with sparse dark granulation in apical part, basally only finely concolorously granulate, stigma pale. Legs pale ochraceous, femora darkened.

Small and slender. Face with a distinct median keel, forked in upper end. Frons distinctly broadening ventrad, lateral margins shallowly upturned. Vertex medially slightly longer than broad basally (9:8 or 10:8), shape about the same as in *O. laelaps* Fenn.; basal compartment distinctly concave, parallel-sided in basal two-thirds, conical apically, median keel present in the basal two-thirds; transverse apical keel sharp, antero-lateral compartments rather broad. Pronotum short, basal margin deeply rectangularly insinuated. Scutellum medially somewhat depressed, distinctly keeled. Setae of elytra pale; claval veins uniting before middle of clavus. Hind tibiae trispinose. Male genitalia (Fig 31): Pygophore nearly symmetrical, although projection of left side lobe somewhat broader. Anal tube with asymmetrical apical lobes on the ventral surface. Styli asymmetrical. Penis as in Fig. 31 f—g, appendages Nos. 1—3 belonging to the aedeagal sheath, Nos. 4—6 to apical part of penis, processes Nos. 4 and 5 with common stem basally. Ovipositor sheath long.

Equatoria: Kapoeta- Boma, 1 ♂, type and 3 paratypes, 26—27. III. 1963.

O. troas sp.n.

Length 4.75 mm. Yellowish brown. Clypeus slightly darker. Basal compartment of vertex, excluding margins, dark brown. Scutellum also dark, keels yellowish brown. Elytra hyaline, unmarked, with a yellowish tinge; veins pale, apical cross-veins infuscate, tubercles concolorous, stigma pale. Legs yellowish brown, femora slightly darker.

Small and gracile. Face with a distinct median keel, forked in upper margin. Frons distinctly expanding ventrad, lateral margins somewhat elevated. Vertex slightly narrower than eye, medially 1.38 × as long as broad basally; basal compartment strongly concave, narrowly conical, about as in *O. ladas* Fenn. but slightly broader, median keel present only basally; apical transverse keel distinct; apical lateral compartments long, narrowly triangular. Pronotum short, basal margin deeply rectangularly incised. Scutellum with the

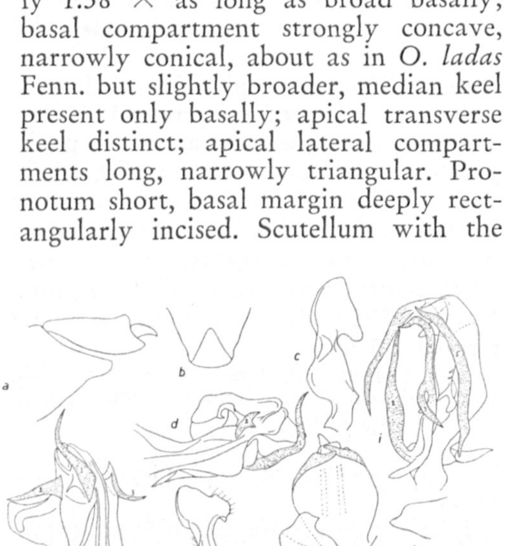

FIG. 32. *Oliarus troas* sp.n.: a pygophore and anal tube; b medio-ventral process of pygophore; c stylus; d penis, latero-ventral aspect; e same, ventral aspect. — *O. gezira* sp.n.: f stylus; g anal tube and left side lobe of pygophore, ventral aspect; h right side lobe of pygophore; i penis.

sublateral keels not reaching the anterior margin. Elytra elongate, setae pale; claval veins uniting before middle of clavus. Hind tibiae trispinose. Male genitalia: Pygophore and anal tube (Fig. 32 a—b) symmetrical, the latter without apical processes. Styli (Fig. 32 c) symmetrical. Penis as in Fig. 32 d—e, with 3 falcate appendages.

Darfur: Abu Matariq, 1 ♂, type, 30. IV—2. V. 1963.

O. *gezira* sp.n.

Length 5.5—6 mm. Head and pronotum remarkably pale, yellowish or yellow-brown. Clypeus golden brown. Vertex rarely medially slightly embrowned. Scutellum black, keels pale. Elytra hyaline, unmarked, stigma dark, veins pale, darkly tuberculate. Under surface and legs mainly dark brown or blackish, tarsi pale.

Elongate, resembling O. *troas*. Frons with a distinct median keel, forked dorsally, lateral margins somewhat elevated, only base of clypeus with a distinct keel. Vertex as in *troas*, but longer, 1.62 × as long as broad, 0.8 × as broad as eye. Thorax and elytra also as in *troas*, but setae of the latter black. Hind tibiae trispinose. Male genitalia: Pygophore (Fig. 32 g—h) nearly symmetrical, side lobes short. Anal tube (Fig. 32 g) ovate, flat, with only narrow ventro-apical lobes. Styli (Fig. 32 f) symmetrical. Penis as in Fig. 32 i. Ovipositor sheath short.

Blue Nile: Wad Medani, 1 ♂, type and several paratypes, 26—28. VI. 1961, 72, 3 paratypes; 72—71, 2 paratypes.

O. *lacon* sp.n.

Length 6.5—8 mm. Yellow-brown. Clypeus with golden tinge. Vertex largely infuscate medially. Scutellum black, carinae golden-brown. Elytra hyaline, unmarked, only stigma and a minute roundish spot in apical cells dark; veins pale, with sparse dark tubercules, apical cross-veins dark. Under surface mainly darker brown. Legs pale.

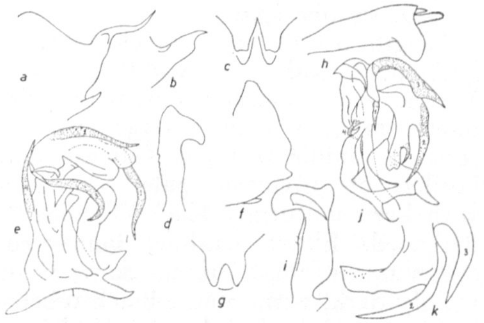

FIG. 33. *Oliarus lacon* sp.n.: a left, b right side lobe, c medio-ventral process of pygophore; d stylus; e penis. — O. *sterope* sp.n.: f left side lobe, g medio-ventral process of pygophore; h anal tube; i stylus; j penis. — O. *sterope* Lv. ssp. *ulysses* ssp.n.: k apex of penis.

Relatively robust. Face with a sharp median keel, forked in upper margin. Frons strongly narrowing dorsad, lateral margins somewhat upturned, clypeus flattish. Vertex as in O. *ladas* Fenn., very narrow, 0.73 × as broad as eye, 1.6—1.8 × as long as broad, very strongly concave, score-like; basal compartment sharply triangular, median carina present only basally; apical transverse carina sharp; antero-lateral compartments very long, extending to near middle of eyes, very narrow. Pronotum narrow, with distinct median carina, otherwise carinate only in anterior margin. Sublateral keels of scutellum not reaching anterior margin. Elytra elongate, setae dark, claval veins uniting well before middle of clavus. Hind tibiae trispinose. Male genitalia: Pygophore (Fig. 33 a—c) asymmetrical, the left side lobe provided with a long, falcate apical process. Anal tube long, flat, symmetrical, without processes. Styli (Fig. 33 d) symmetrical. Penis as in Fig. 33 e. Ovipositor sheath short.

Equatoria: Kapoeta- Boma, 1 ♂, type and some paratypes, 26—27. III. 1963.

O. *sterope* sp.n.

Length 5—5.5 mm. Black. Median keel and lateral margins of frons pale. Vertex black, margins narrowly pale, lateral margins with a larger whitish spot at middle of eyes. Carinae and borders of pronotum pale. Scutellum with keels uniformly black. Tegulae ± darkened. Elytra hyaline, unmarked, sometimes infumed, stigma dark; veins mainly dark, with minute black tubercles. Legs mainly dark brown, hind tarsi pale.

A very gracile species of the *damasi* group. Frons strongly narrowing upwards, median keel sharp, forked dorsally, lateral margins distinctly upcurved; clypeus depressed, transversely wrinkled, only base clearly carinate. Vertex very narrow, parallel-sided, strongly concave, score-like, only 0.5 × as broad as eye, 2.7—2.8 × as long as broad; basal compartment apically sharply triangular; apical transverse keel distinct; antero-lateral compartments very narrow, long. Pronotum short, median keel sharp. Keels of scutellum rather fine, the sublateral ones not reaching the anterior margin. Elytra narrow, setae dark, claval veins uniting nearly at middle of clavus. Hind tibiae trispinose. Male genitalia: Pygophore (Fig. 33 f—g) symmetrical, side lobes short. Anal tube (Fig. 33 h) broadening apicad, symmetrical. Styli (Fig. 33 i) symmetrical. Penis as in Fig. 33 j. Ovipositor sheath short.

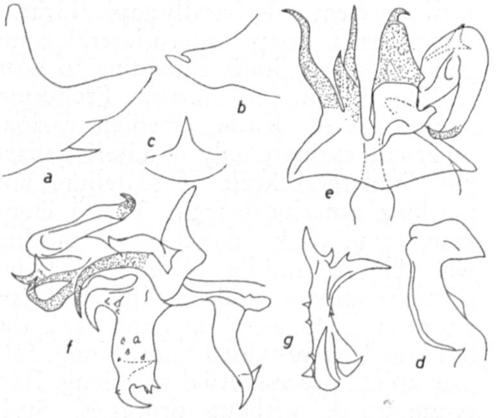

FIG. 34. *Oliarus ndelelensis* Syn. ssp. *cleon* ssp.n.: a left, b right side lobe, c medio-ventral process of pygophore; d stylus; f penis from side; e same, dorsal aspect; g process a in Fig. f, caudal aspect.

Kassala: Abend Pass, 1 ♂, type and 2 paratypes, 5. XII. 1962. Clearly distinguished from *O. damasi* Syn. and *O. ladas* Fenn. by the male genitalia.

O. *sterope* Lv. ssp. *ulysses* ssp.n.

Like the nominate form, but appendages Nos. 3 and 2 of penis longer and more gracile (Fig. 33 k) and process No. 1 absent.

Equatoria: Kapoeta-Boma, 1 ♂, type and 2 paratypes, 26—27. III. 1963.

O. *ndelensis* Syn. ssp. *cleon* ssp.n.

Length 5 mm. Black. Median keel and lateral margins of face narrowly pale. Lateral margins of vertex narrowly pale with a larger pale spot at middle of eyes. Median keel and margins of pronotum pale. Scutellum black, sublateral keels pale. Tegulae brown. Elytra brownish hyaline, slightly infuscate, unmarked, stigma dark; veins pale, with distinct dark tubercles, apical cross-veins dark, claval commissure black, interrupted by two whitish stretches. Legs yellowish brown, femora dark.

Small. Face with sharp median keel, forked in upper margin, relatively narnow. Frons strongly tapering dorsad, lateral margins upcurved, clypeus flattish. Vertex as in O. *gezira* and *troas*, 1.57 × as long as broad, slightly narrower than eye; basal compartment narrowly conical, strongly concave, median carina present only basally; apical transverse carina sharp; antero-lateral compartments long and narrow. Median carina of pronotum strongly elevated, margins also ± carinate. Scutellum rugose, keels complete. Elytra narrow, setae black, claval veins uniting well

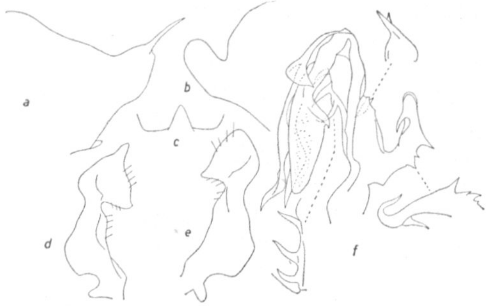

FIG. 35. *Oliarus doris* sp.n.: a left, b right side lobe, c medio-ventral process of pygophore; d—e stylus; f penis.

before middle. Hind tibiae trispinose. Male genitalia: Pygophore (Fig. 34 a—c) asymmetrical, left side lobe sharply triangular, right shorter and apically bifid. Anal tube ovate, without processes. Styli (Fig. 34 d) symmetrical. Penis as in Fig. 34 e—g.

The nominate form (Zaire) differs in the longer vertex and the spinulation of the ventral aedeagal process (SYNAVE 1960:36—38).

Equatoria: Maridi-Ibba, 1 ♂, type, 16. IV. 1963.

O. *doris* sp.n.

Length 5—6 mm. Like O. *frontalis* Mel., but much smaller and more compact. Darker (like ssp. *fuligo*): Frons black or blackish, keels yellowish, lateral margins with a white spot at middle. Vertex slightly broader. Elytra much shorter (apical cross-veins darkened, stigma dark, apical area sometimes with slight dark shadows). Male genitalia: Pygophore (Fig. 35 a—e) asymmetrical, left side lobe with a slender apical spine, right lobe unarmed; medio-ventral process triangular. Anal tube broad, only slightly asymmetrical, without special processes. Styli (Fig. 35 d—e) asymmetrical. Penis as in Fig. 35 f, ventral margin of the aedeagal sheath with a long, spinose process directed ventrad, dorsal margin with a row of 3 claw-like spines. Ovipositor sheath shorter than in *frontalis.*

Kassala, Erkowit, 1 ♂, type and several paratypes, 1—10. VII. 1961.

O. *pidigalensis* Syn.

Male genitalia: Pygophore (Fig. 36 a—c) asymmetrical, left side lobe sharply produced, right broad and bluntly truncate apically, medio-ventral process spear-shaped. Anal tube (Fig. 36 d) with asymmetrical apico-ventral lobes. Styli (Fig. 36 e) symmetrical. Penis as in Fig. 36 f—g.

66—67, 1 ♂. Zaire.

O. *kankundensis* Syn.

Material probably representing this species, of which only the female sex has so far been known. Male genitalia: Pygophore (Fig. 37 a—c) asymmetrical, left side lobe with a thin apical claw-like process, right triangular and provided with a large tooth above the triangulary produced part. Anal tube (Fig. 37 d) with a thin claw-like process apically. Styli (Fig. 37 e) symmetrical. Penis as in Fig. 37 f—g.

66—67, 2 exx.; 66—64, several exx. Previously known from Zaire and French Guinea.

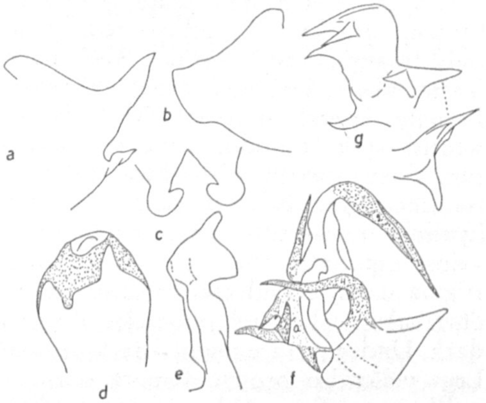

FIG.36. *Oliarus pidigalensis* Syn.: a left, b right side lobe, c medio-ventral process of pygophore; d anal tube, ventral aspect; e stylus; f penis; g the spinose plate a in Fig. f of the aedeagal sheath.

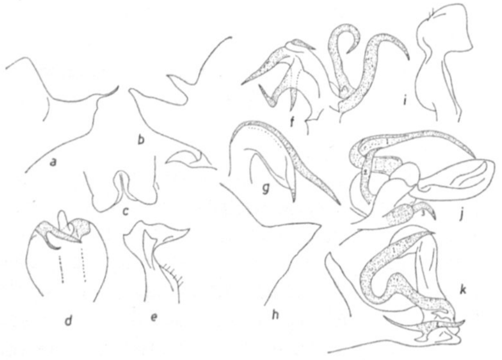

FIG. 37. *Oliarus kankundensis* Syn.: a left, b right side lobe, c medio-ventral process of pygophore; d anal tube, ventral aspect; e stylus; f penis; g apex of same. — *O. medanicus* sp.n.: h left side lobe of pygophore; i stylus; j—k penis.

O. frontalis group

A large group of species similar to each other in general appearance (elongate body, elytra with black setae arising from dark tubercles and with partly darkened veins, etc.), but clearly distinguished by the male genitalia. To this group belong all the following species except the last, *O. camilla.*

O. medanicus sp.n.

Length 5—6.5 mm. Face yellowish brown, usually ± embrowned, with only margins and median keel pale. Vertex black, keels and margins narrowly pale, lateral margins with a larger whitish spot at middle of eyes. Pronotum dirty greyish with discal infuscation. Scutellum black, keels pale. Elytra hyaline, immaculate, veins pale, apical veins, especially the cross-veins, dark, stigma dark, claval commissure with a dark subapical stretch, tubercles of veins dark. Under surface mainly dark brown. Legs yellowish brown, femora dark.

Elongate. Face with a sharp median keel, forked in its upper end. Frons moderately broadening ventrad, with lateral margins upcurved, clypeus slightly convex. Vertex narrow, somewhat variable in shape, sometimes even nearly as narrow as in *O. ladas* Fenn., 1.30—1.33 × as long as broad, somewhat narrower than eye (10:12); basal compartment strongly concave, sharply conical, only basally keeled; apical transverse ridge sharp; antero-lateral compartments long, narrowly triangular. Pronotum very short, median keel sharp, also margins ± carinate. Carination of scutellum complete. Elytra narrow, setae pale to brown, claval veins united at middle of clavus. Hind femora trispinose. Male genitalia: Pygophore (Fig. 37 h) symmetrical, side lobes sharply triangular; medio-ventral process as in *frontalis.* Anal tube ovate, without apical processes. Styli (Fig. 37 i) symmetrical. Penis as in Fig. 37 j—k. Ovipositor sheath long.

Resembling *O. frontalis* Mel., but vertex narrower and the male genitalia different.

6, 1 paratype; 29, several paratypes; 22—25, several paratypes; 21, several paratypes, 14. X. 1926, Bedford, British Museum, 11—12. XI. 1962; Umm Banein, 1 ♂, type and several paratypes, 14. XI. 1962; 84, 1 paratype; 85—84, Geil, 1 paratype.

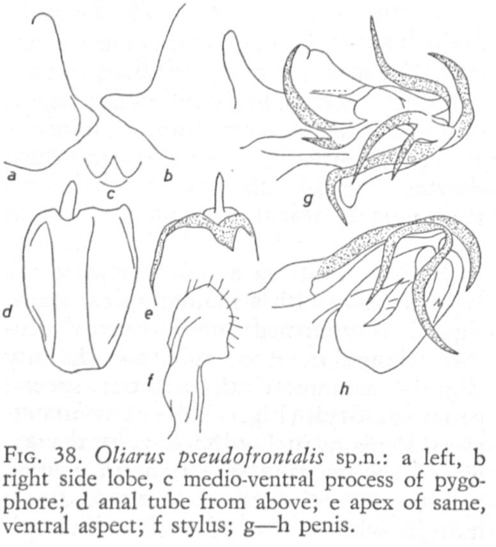

FIG. 38. *Oliarus pseudofrontalis* sp.n.: a left, b right side lobe, c medio-ventral process of pygophore; d anal tube from above; e apex of same, ventral aspect; f stylus; g—h penis.

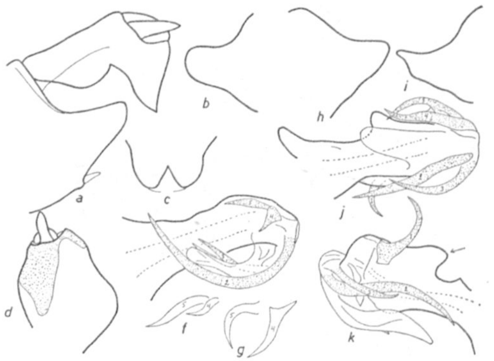

FIG. 39. *Oliarus frontalis* Mel.: a pygophore and anal tube from left; b right side lobe and c medio-ventral process of pygophore; d anal tube, ventral aspect; e penis; f appendages Nos. 4 and 5 of same (Wad Medani); g same (Juba). — *O. azrak* sp.n.: h left, i right side lobe of pygophore; j—k penis (appendages numbered as in Fig. e).

O. *pseudofrontalis* sp.n.

Length 6.5—7 mm. Like O. *frontalis*. Vertex 1.36 × as long as broad, as broad as eye, less tapering apicad than in *frontalis*. Stigma only slightly infuscate, setae of elytra long and black. Male genitalia: Pygophore (Fig. 38 a—c) only slightly asymmetrical, left side lobe blunter than right, medio-ventral process sharply triangular. Anal tube (Fig. 38 d—e) with only a narrow apicoventral process. Styli (Fig. 38 f) symmetrical. Penis as in Fig. 38 g—h.

South Yemen, Jebel Jihaf, Wadi Lejij, 1 ♂, type and several paratypes, 28. IX. 1937, Scott & Britton and Yemen, Usaifira, near Ta'izz, 1 paratype, 18. XII. 1937, coll. the same, British Museum, paratypes also in my collection.

O. *frontalis* Mel.

Described by me previously (LINNAVUORI 1964:340—341). Some additional remarks on the male genitalia: Left side lobe of pygophore sharp, right blunt (Fig. 39 a—c). Anal tube (Fig. 39 d) strongly asymmetrical. Penis as in Fig. 39 e—g, aedeagal sheath without the strongly prominent rounded lobes present in the following species, falcate appendage No. 2 very long, extending beyond apex of penis. Appendages Nos. 4 and 5 variable in length: No. 4 usually short and No. 5 fairly straight, but in the specimens from Equatoria process No. 4 is long and process No. 5 strongly curvate.

Many exx. from 6; 7; 2; 19; 29; 23; 27; 21; 40; 72; 72—71; 72. On *Acacia*. At lamp. E. Africa, Egypt.

O. *frontalis* Mel. ssp. *fuligo* ssp.n.

Length 6—7 mm. Separated from the nominate subspecies as follows:

frontalis fuligo

1. somewhat more robust; elytra shorter and broader.
2. face dark brown, with a contrasting whitish spot at either lower end of lateral margins of frons.
3. apex of elytra broadly dark fuscous, interrupted by a ± large hyaline transverse area caudad of stigma; a fuscous transverse band at middle, base also infuscate.
4. femora blackish brown, also other parts of legs darker.

frontalis frontalis

1. elongate elytra longer and narrower.
2. frons yellow-brown, the pale spots less pronounced.
3. cells of apex of elytra always hyaline, immaculate; sometimes a fuscous transverse band present at middle or base infuscate (f. *basalis* Mel.).
4. legs yellow-brown.

The male genitalia are similar in both forms, except that appendage No. 1 is longer and recurved basad (apicad in the nominate form) and process No. 2 is longer and thinner in *fuligo*.

24—24 a, 2 paratypes; 26, 1 paratype; Singa-Damazin, 1 ♂, type and many paratypes, 15—17. XI. 1962; 23, several paratypes; 21, 1 paratype.

O. *azrak* sp.n.

Length 5.2—7 mm. Like *frontalis,* but face somewhat narrower and male genitalia different: Left side lobe of pygophore blunt, right sharp (Fig. 39 h—i). Penis (Fig. 39 j—k) with strong, prominent rounded lobes (marked with an arrow in the figure) in the aedeagal sheath, processes Nos. 2 and 3 shorter and appendages Nos. 4 and 5 longer and thicker. Other genitalia as in *frontalis.*

O. *garambaensis* Syn. (Congo) is a closely related species differing in the spinulation of the penis (Synave 1953a: 28—29).

24—24 a, 1 paratype; 26, several paratypes; 22—25, several paratypes; Wad Medani, 1 ♂, type and many paratypes, 11—12. XI. 1963; 72—71, 1 paratype; 81—82, 2 paratypes.

O. *nemea* Fenn. — 35, 1 ♀ probably of this species. Known from Mali.

O. *hyperides* Fenn. — 84, several exx.; 85—84, 2 exx.; 41, 3 exx.; 52, several ex. Senegal.

O. *pythaules* Fenn. — 51, 1 ex.; 52, several exx.; 72, 4 exx. Senegal.

O. *pleone* sp.n.

Length 6.5 mm. Like *frontalis,* but vertex slightly broader and with dissimilar genitalia. Pygophore (Fig. 40 a—c) asymmetrical, left side lobe sharply triangular, right shallowly bilobate apically. Anal tube (Fig. 40 d) asymmetrical. Styli (Fig. 40 e) symmetrical. Penis as in Fig. 40 f, appendages Nos. 1—3 belonging to the aedeagal sheath, processes Nos. 4 and 5 long and falcate.

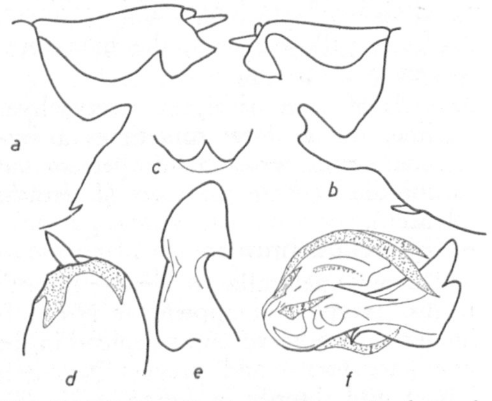

Fig. 40. *Oliarus pleone* sp.n.: a anal tube and pygophore from left; b same from right; c medio-ventral process of pygophore; d anal tube, ventral aspect; e stylus; f penis.

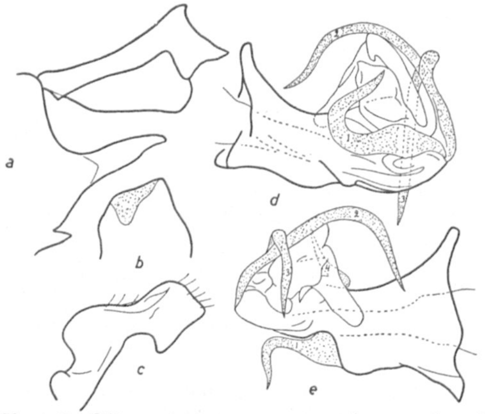

Fig. 41. *Oliarus iasis* sp.n.: a pygophore and anal tube from left; b apex of anal tube, ventral aspect; c stylus; d—e penis.

According to the genitalia, closely related to O. *orithyia* Fenn., but the left side lobe of the pygophore has a strongly produced, narrow apical part and the upper apical process of the right side lobe is longer than the lower one. The anal tube is also somewhat different and appendages Nos. 4 and 5 of the penis thicker and longer.

Equatoria: Torit-Kapoeta, 1 ♂, type, 26. III. 1963.

O. *iasis* sp.n.

Length 7—8 mm. Like *frontalis,* but bigger and more robust. Face, especially frons, darker, the last-named also somewhat broader. Male genitalia: Pygophore (Fig. 41 a—b) symmetrical, side lobes with a very long and narrow apical part, medio-ventral process sharply triangular. Anal tube (Fig. 41 b) asymmetrical. Styli (Fig. 41 c) symmetrical. Penis as in Fig. 41 d—e.

Upper Nile: Malakal, 1 ♂, type and 6 paratypes, 5—20. I. 1963.

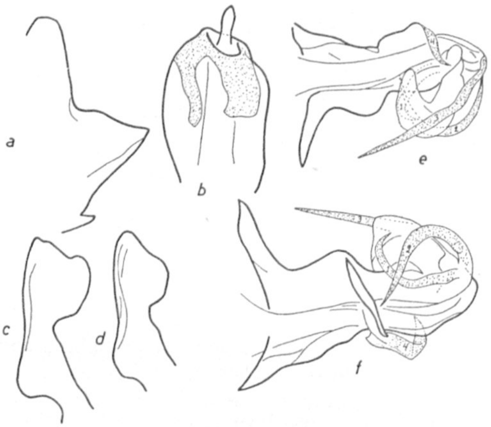

FIG. 42. *Oliarus scylla* sp.n.: a pygophore from left; b anal tube, ventral aspect; c—d styli; e—f penis.

O. *scylla* sp.n.

Length 7—8 mm. Resembling *frontalis,* but bigger and more robust. Face flatter, frons mainly dark brown. Clavus with an oblique, triangular dark basal band along suture near to the junction of the claval veins. Basal compartment of vertex somewhat more strongly tapering apicad. Male genitalia: Pygophore (Fig. 42 a) symmetrical, side lobes triangular, medio-ventral process as in *frontalis.* Anal tube (Fig. 42 b) with asymmetrical apico-ventral processes. Styli (Fig. 42 c—d) slightly asymmetrical. Penis as in Fig. 42 e—f.

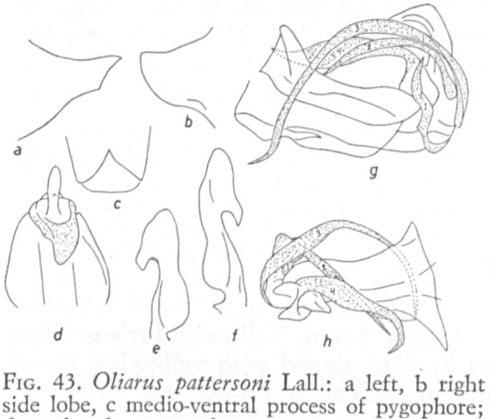

FIG. 43. *Oliarus pattersoni* Lall.: a left, b right side lobe, c medio-ventral process of pygophore; d anal tube, ventral aspect; e—f styli; g—h penis.

Bahr el Ghazal: Wau, 1 ♂, type, 19. II. 1963. In addition, a female from 64—63 may belong to the species.

O. *pattersoni* Lall.

Material apparently representing this species. Male genitalia: Pygophore and anal tube left, medio-ventral process of pygophore triangular. Styli (Fig. 43 e—f) asymmetrical. Penis as in Fig. 43 g—h.

84, many exx. Previously known from Ghana.

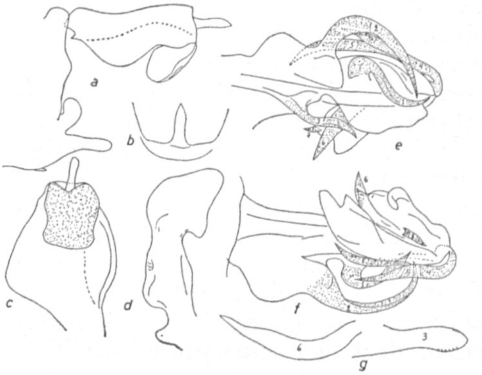

FIG. 44. *Oliarus camilla* sp.n.: a pygophore and anal tube from left; b medio-ventral process of pygophore; c anal tube, ventral aspect; d stylus; e—f penis; g appendages Nos. 6 and 3 of same.

O. *camilla* sp.n.

Length 7 mm. Face golden brown; frons with a faint transverse fuscous fascia at frontal ocellus; upper part of frons and anterior margin of head strongly shiny, black. Vertex mainly dark brown, keels, margins and the small medio-apical areolet yellowish brown. Pronotum and tegulae yellowish brown. Scutellum golden brown, laterally and apically ± darkened, keels concolorous. Elytra hyaline, immaculate; stigma pale, with caudal margin dark; veins pale, with dense dark tubercules apical cross-veins dark. Dorsum dark brown. Under surface yellowish brown, with dark markings. Legs yellow-brown, femora darker.

Robust. Anterior margin of head somewhat callose, strongly shiny, smooth, the apical transverse ridge bordering vertex absent or poorly developed. Frons strongly broadening ventrad, concave, rather short, median carina sharp, in upper margin evanescent, the fork absent; clypeus with a sharp, percurrent median carina. Eyes remarkably large, prominent. Vertex nearly as broad as long (13:14), distinctly narrower than eye (13:16); basal compartment concave, well delimited, with lateral margins subparallel in basal two-thirds, apex broadly conical (shape nearly as in *O. hipponax* Fenn., but slightly shorter); apico-lateral compartments rather broad, anteriorly not clearly delimited. Pronotum short, median carina sharp, margins also carinate. Sublateral keels of scutellum evanescent both apically and basally. Setae of elytra long and dark, claval veins uniting at middle of clavus. Hind tibiae trispinose. Male genitalia: Pygophore (Fig. 44 a—b) symmetrical, side lobes provided with a bifurcate apical prolongation, medioventral process long and narrow. Anal tube (Fig. 44 c) strongly asymmetrical. Styli symmetrical (Fig. 44 d). Penis as in Fig. 44 e—g.

Easily recognized by the large eyes, the structure of the head, the long setae of the elytra and the male genitalia.

Equatoria: Kapoeta- Boma, 1 ♂, type and 2 paratypes, 26—27. III. 1963.

CIXIUS Lt.

C. chinai Syn. — 78—79, 1 ex. Previously known from Zaire.

MYNDUS St.

M. cupido sp.n.

Length 5 mm. Yellowish brown. Vertex sometimes with two faint dark longitudinal stripes. Scutellum between carinae black, sometimes also laterally ± darkened, median carina pale, others black. Elytra hyaline, shiny, with yellowish tinge, apex darker, apical veins with a triangular dark brown apical spot, partly suffused into each other in apical margin; stigma pale, but with a triangular fuscous spot at either end, veins otherwise pale, tubercles darker. Under surface mainly dark brown. Legs yellow-brown.

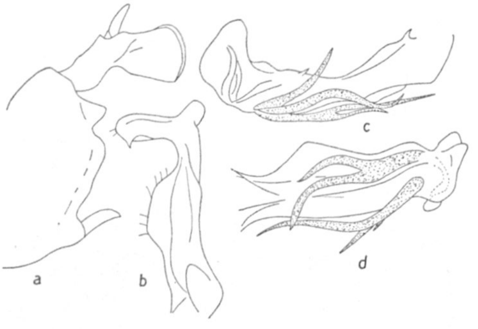

FIG. 45. *Myndus cupido* sp.n.: a pygophore and anal tube from left; b stylus; c—d penis.

Face with a sharp median carina. Frons distinctly broadening ventrad, 1.14 × as long at middle as greatest width, margins arcuate. Vertex 1.33 × as long at middle as broad basally, narrow, sharply conical, proportion between the basal and apical compartments 16:15. Lateral keels of scutellum diverging caudad. Elytra as in, e.g., *M. mutakatoensis* Syn. Male genitalia: Pygophore and anal tube in Fig. 45 a. Stylus (Fig. 45 b) with a strongly expanded, narrow, hammer-shaped apex. Penis (Fig. 45 c—d) with two bifurcate and falcate appendages.

Equatoria: Kateri- Gilo, 1 ♂, type and several paratypes, 18. III. 1963. Swept from undergrowth in forests of the *Podocarpus* zone.

M. nymphias sp.n.

Length 3 mm. Yellowish brown. Elytra hyaline, tinged with yellowish; tip of clavus, apical and subapical veins, including cross-veins, infuscate, also some apical cells ± infuscate, a fuscous spot

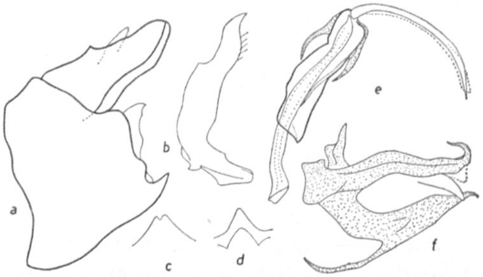

FIG. 46. *Elaphodelphax nigropictus* Fenn.: a pygophore; c anal tube, ventral aspect; d stylus; diaphragm; d medio-ventral process of pygophore; e penis. — *Myndus nymphias* sp.n.: f penis (the schlerified area stippled).

at either end of pale stigma, veins otherwise pale, with concolorous tubercles.

Frons broadening ventrad, as long at middle as greatest width, lateral margins arcuate, median keel sharp. Vertex slightly shorter medially than broad basally, shape otherwise much as in *M. mutakatoensis* Syn. but shorter, conical; apical margin bluntly angularly produced, sharp; apical compartment distinctly deflected ventrad, proportion between the basal and apical compartments 9:11. Lateral keels of scutellum slightly diverging caudad. Elytra as in *M. mutakatoensis.* Male genitalia: Pygophore and anal tube in Fig. 47 g. Stylus (Fig. 47 h) curvate, with a rounded subapical expansion. Penis (Fig. 46 f) medially membraneous, ventral margin with a long, falcate appendage, apex with a strongly upcurved, clawlike process.

Equatoria: Yambio, 1 ♂, type, 18—25. IV. 1963.

HEMITROPIS Fb.

H. seticulosa (Leth.) — Many exx. from 6; 2; 9; 23. On *Tamarix*. Eremian.

BASHGULTALA Dlab.

B. maculipennis sp.n.

Length 5 mm. Pale ochraceous. Vertex laterally slightly embrowned. Scutellum somewhat darker ochraceous. Elytra hyaline, costal margin with about 6 ± developed dark fuscous transverse spots, clavus and other parts of corium also with transverse fuscous spots; a broken, irregular, transverse, dark smoky apical band present; cross-veins of subapical area and ends of apical veins dark smoky. Legs ochraceous, immaculate.

Body as in *B. clara* Dlab., but somewhat shorter and more robust. Frons broader and broadening more strongly downwards. Vertex much shorter, scarcely extending beyond anterior margins of eyes.

Easily distinguished from *B. clara* Dlab. (Afghanistan) by the maculate elytra and the structural details mentioned above.

South Yemen: Lahej- Dhala road, 1 ♂, type, 9—15. VII. 1963.

BRIXIA St.

B. speciosa Muir — 52, 1 ex.; 81—82, several exx.; 63—62, 1 ex.; 68, 1 ex.; 64—63, 1 ex. In swamps. At lamp. Zaire, E. Africa (Nyassaland).

B. meeli Syn. — 68, 1 ex.; 74, 1 ex. Zaire.

DELPHACIDAE

A paper on the *Delphacidae* of the Sudan has been published by FENNAH (1969). In it several new species and genera, marked as endemics in the following list, have been described. The generic classification within the family is at present rather tentative especially regarding the splitting of the large old heterogeneous genera *Dicranotropis* Fb., *Delphacodes* Fb. and *Calligypona* J.Sb. In the list below I have followed advice received from Dr. Fennah in a letter on the generic location of various species originally referred to these genera, but the present treatment is in some cases very tentative.

Asiracinae

ELAPHODELPHAX Fenn.

E. nigropictus Fenn.

Male genitalia as in Fig. 46 a—e.

77, 1 ex.; 64—63, 1 ex. E. Africa.

Delphacinae

TROPIDOCEPHALA St.

T. elegans (C.) — 70, 2 exx.; 64—63, 3 exx.; 60, 1 ex.; 59—60, 4 exx. The Mediterranean subregion, N. Africa. I also have specimens from S. Africa (identified by Fennah).

T. umbrina sp.n.

Length 2.5—3.5 mm. Like *T. brunnipennis* Sgn., but face strongly concave in profile and vertex longer, 1.7 × as long as broad, 1.5 × as long as pronotum. Male genitalia (Fig. 47 a—e) very dissimilar. The genitalia of *brunnipennis* are figured by ISHIHARA (1949, plate 2).

The genus is in need of revision. *T. brunnipennis* Sgn. has been regarded as Palaeotropical by METCALF 1943:93—94, since it was reported from Europe and Egypt, but these records undoubtedly refer to *T. elegans*. It was originally described from Madagascar and has later been recorded from Africa to Japan and the Australian Region. My concept of *brunnipennis* is based on Japanese specimens in my collection and on the redescription of ISHIHARA mentioned above.

79, 1 paratype; 63—62, 1 paratype; Lotti forest, 1 ♂, type, and many paratypes, 14—17. III. 1963; 78—79, 1 paratype; 62, 4 paratypes; 66—67, 1 paratype; 66—64, 1 paratype.

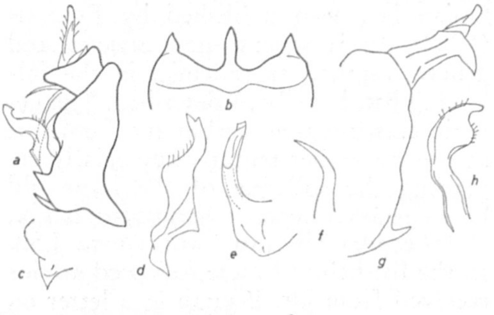

FIG. 47. *Tropidocephala umbrina* sp.n.: a pygophore from side; b same, ventral aspect; c appendage of anal tube; d stylus; e stem, f basal process of penis. — *Myndus nymphias* sp.n.: g pygophore from side; h stylus.

T. montana sp.n.

Length 4—5.5 mm. Orangish. Carinae of head and of thorax white and finely bordered with fuscous. 1st antennal joint with one, 2nd with two oblique dark rings.

Gracile. Vertex 1.9—2.0 × as long as broad, 2.1 × as long as pronotum (median lengths measured), narrow; median carina sharp, lateral margins sharply upcurved. Frons nearly 3 × as long as broad, shallowly concave in profile, in lower half parallel-sided, then tapering upwardly, lateral margins and median keel elevated; clypeus with a sharp median keel, flattish, upper margin rounded. Pronotum with sharp keels. Also scutellar keels distinct. Elytra long, 2.8 × as long as their greatest width; veins with pale tubercles, each bearing a long yellowish seta, special knobs absent. Male genitalia in Fig. 48 a—e.

Related to *T. nesis* Fenn. (French Guinea) and *T. incompta* Muir (Sierra Leone), but differing in the larger size and the male genitalia.

78—79, 2 paratypes; 79, 1 paratype; Lotti forest, 1 ♂, type and 1 paratype, 14—17. III. 1963.

T. aurantiaca sp.n.

Length 3.25 mm. Like the preceding, but 1) much smaller, 2) colouring more strongly orangish, elytra golden brown with spots in apical cells, a subapical fascia and costal margin hyaline, apical veins with a distinct fuscous triangular spot, 3) head much shorter: vertex 1.3 × as long as broad and likewise 1.3 × as long as pronotum, frons 2.1 × as long as broad and 4) with different male genitalia (Fig. 48 j—h): medio-ventral

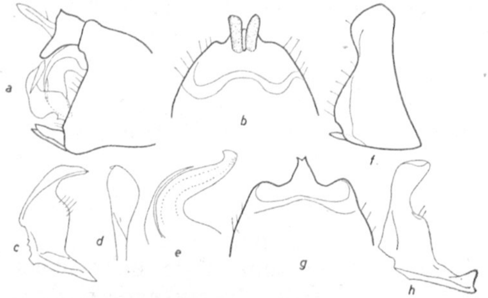

FIG. 48. *Tropidocephala montana* sp.n.: a genital segment from side; b pygophore, ventral aspect; c stylus; d apex of same, broad aspect; e penis. — *T. aurantiaca* sp.n.: f pygophore from side; g same, ventral aspect; h stylus.

process of pygophore conical, with a slightly bifid apex and stylus much more robust. Penis and anal tube as in the preceding species.

Medio-ventral process of pygophore much as in *T. nesis* Fenn., but head much shorter, caudo-lateral margins of pygophore dissimilarly curvate in profile, apophysis of stylus much thicker and penis dissimilarly curved.

Equatoria: near Gilo, 1 ♂, type, 18—24. III. 1963; 73—75, 1 ♀ paratype.

EURYSA Fb.

E. imatonga sp.n.

Length 5—5.5 mm. Stramineous. Elytra hyaline, veins pale. Dorsum of abdomen, excluding pygophore, orangish in ♂. Spines of legs black-tipped.

Long and gracile. Vertex slightly broader than long (20:19), basal compartment 1.67 × as broad as long, apical part of vertex rugose, broadly rounded to face. Frons 1.8 × as long as broad, broadest at lower part of eyes, rugose median keel sharp, evanescent at apex of head. Clypeus with a distinct median keel. 2nd antennal joint twice as long as 1st. Lateral carinae of pronotum diverging caudad, not reaching the basal margin. Elytra much longer than abdomen, narrow, nearly 5 × as long as broad, rather acuminate apically, apical cells long, veins finely tuberculate and provided with dark setae. Male genitalia in Fig. 49 f—j, 50 a—b.

Easily recognized by the size, colouring, the long and narrow elytra and the genitalia (medio-ventral process of pygophore strongly produced, appendages of anal tube long, falcate and crossed, styli small).

79, several paratypes; Kateri-Gilo, 1 ♂, type and several paratypes. From mountain meadows.

E. bidentata sp.n.

Length 3.5—3.75 mm. Yellow-brown. Clypeus and frons partly infumed. Elytra brownish hyaline. Abdomen dorsally reddish brown, laterally blackish. Fore and middle legs and hind femora with dark longitudinal bands.

Relatively robust, parallel-sided. Vertex 1.22 ×, basal compartment 1.83 × as broad as long; apex of head rugose, keels evanescent; frons 1.84 × as long as broad, slightly tapering downwards, with a sharp median keel, continuing on to clypeus. Lateral keels of pronotum diverging caudad, not reaching the basal margin. Elytra somewhat longer than abdomen, narrow, rather acuminate apically, 3 × as long as broad. Flying wings reduced, scale-like. Male genitalia

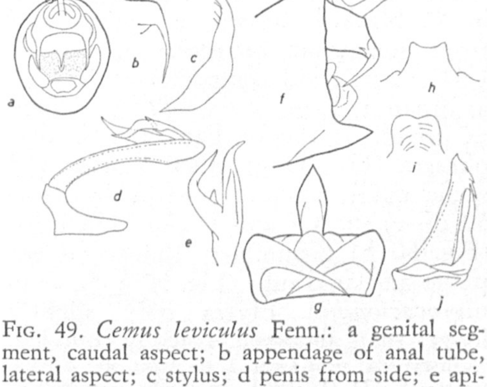

FIG. 49. *Cemus leviculus* Fenn.: a genital segment, caudal aspect; b appendage of anal tube, lateral aspect; c stylus; d penis from side; e apical appendages of same, dorsal aspect. — *Eurysa imatonga* sp.n.: f genital segment, lateral aspect; g anal tube, ventral aspect; h medioventral process of pygophore; i diaphragm; j penis.

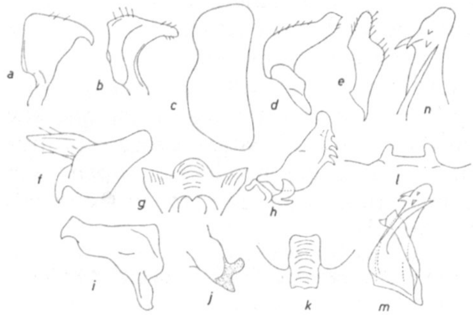

FIG. 50. *Eurysa imatonga* sp.n.: a—b stylus. — *E. atramentaria* sp.n.: c pygophore from side; d—e stylus; f anal tube; g diaphragm; h penis. — *E. bidentata* sp.n.: i stylus; j appendage of anal tube; k diaphragm; 1 medio-ventral process of pygophore; m—n penis.

in Fig. 50 i—n. Medio-ventral process of pygophore short, provided with two remote teeth. Diaphragm long and narrow. Appendages of anal tube short, apically bifid.

Closely related to the preceding species.

Yemen, Wadi Sabir, N. face of Jebel Sabir, 1 ♀, type, British Museum, 1 ♂ paratype, my collection, 19. XII. 1937, Scott & Britton.

E. atramentaria sp.n.

Length 2.75 mm., f. brach. Very similar to *E. nigrocacuminis* Muir (S. Africa), but 1) elytra in ♂, sometimes also in ♀, blackish brown, 2) vertex and frons somewhat broader, the former 1.57 ×, its basal compartment 2.44 × as broad as long, frons 1.42 × as long as broad, 3) the median lobe of diaphragm (Fig. 50 g) much shorter and semicircular, apophysis of stylus (Fig. 50 d—e) shorter and thicker and penis (Fig. 50 h) dissimilarly shaped. Pygophore and anal tube (Fig. 50 c, f), as in *nigrocacuminis*. Elytra only slightly longer than abdomen, apically rounded.

Equatoria: near Gilo, 1 ♂, type, and 4 paratypes, 18—24. III. 1963. In alpine meadows.

PSEUDARAEOPUS Kk.

P. iranicus Dl. — 7—8, 3 exx.; 17, 2 exx. On desert grasses. Eremian, previously known from Iran.

BOSTAERA Ball

B. bolivari (Mel.) — 17, several exx.; 52, 1 ex. On *Panicum turgidum*. Eremian (Portugal, Spain, Egypt, Israel, Arabia).

AMBLYCOTIS St.

A. alpinus sp.n.

Length 4—5 mm. Pale ochraceous. Clypeus and frons below eyes slightly embrowned. Elytra hyaline, veins of apical part dark fuscous, those of corium with small dark tubercles. Dorsum of abdomen medially broadly darkened. Legs with longitudinal dark stripes.

Head 1.27 × as broad as pronotum. Vertex 2.3 × as broad as long. Frons slightly broader than long (17:16), broadest at lower angles of eyes, then strongly tapering ventrad; median keels also separated from each other ventrally, diverging upwards to the broadest point of frons, then parallel. Clypeus moderately convex, with a sharp median carina. 1st antennal joint triangular, 1.23 × as long as broad, 2nd 2.2 × as long as broad, 1.38 × as long as 1st. Structure otherwise as in *A. laticeps* St. Male genitalia in Fig. 51.

Resembling *A. laticeps* St. (S. Africa), but differing in the male genitalia (those of *laticeps* illustrated in MUIR 1926; p. 24 and LINDBERG 1958:145), e.g. the

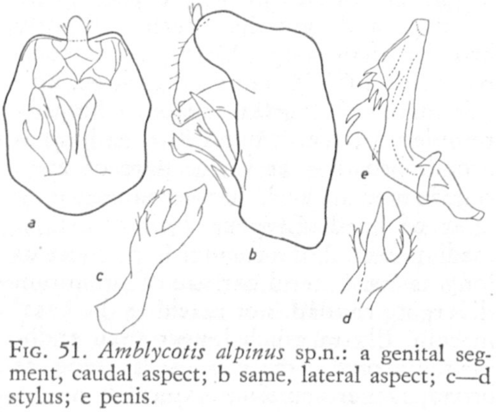

FIG. 51. *Amblycotis alpinus* sp.n.: a genital segment, caudal aspect; b same, lateral aspect; c—d stylus; e penis.

medio-ventral process of the pygophore is thicker and somewhat recurved ventrad in the lateral aspect (shallowly upwards curved in *laticeps)* and the dorsolateral angles of the pygophore are much broader in profile. *A. horvathi* (Muir) (S. W. Africa) has an entirely dissimilar pygophore and stylus (Muir 1934:576).

Equatoria: near Gilo, 1 ♂, type and some paratypes (♂♀), 18—24. III. 1963; 77, 1 ♀ paratype. In mountain and alpine meadows.

ASIRACINA Mel.

A. badia (Muir) — 62, 2 exx. Previously known from Nigeria.

THRIAMBUS Fenn.

T. (Dicranotropis) nicias (Fenn.) — Several exx. from 52; 63—62; 72; 78—79; 77; 68; 62; 66—67; 66—64. Previously known from W. Africa.

T. (Peregrinus) vegetatus (Mel.) — 77, 2 exx. Zaire.

T. (Dicranotropis) obscurella (Lall.) — »The Nile», 1 ex., Gyldenstolpe, Mus. Stockholm. Endemic. Uncertain whether taken in the Sudan or Uganda.

T. helias Fenn. — 62, 1 ex. Endemic

T. iapis Fenn. — 62, 2 exx. Endemic.

T. accà Fenn. — 62, 1 ex. Endemic.

T. paniscus Fenn. — 68, 1 ex. Endemic.

T. (Dicranotropis) narnia (Fenn.) — 52, 1 ex.; 62, 2 exx. Previously known from Senegal.

T. (Dicranotropis) idmon (Fenn.) — Many exx. from 9; 28; 22—25; 23; 21; 84; 85—84; 30 km N of 71. Previously known from Mauretania.

CEMUS Fenn.

C. viator Fenn. — 63—62, 2 exx.; 77, several exx.; 61—52, 2 exx.; 62, 3 exx.; 66—67, 1 ex. Endemic.

C. hipponax Fenn. — 77, several exx. Endemic.

C. leviusculus Fenn.

Male genitalia in Fig. 49 a—e.

63—62, 1 ex. Previously known from Seychelles and Mauritius.

DOGODELPHAX Ldb.

D. nigropunctatus Ldb. — 50, 2 exx.; 52, several exx. Previously known from Togo.

NUMATA Mats.

N. sacchari (Mats.) — 77, 1 ex.; 62, 1 ex.; 66—67, 1 ex. Palaeotropical, previously known from the Oriental Region, Formosa and Japan.

N. parmenio Fenn. — 84, 1 ex.; 72, 2 exx. Endemic.

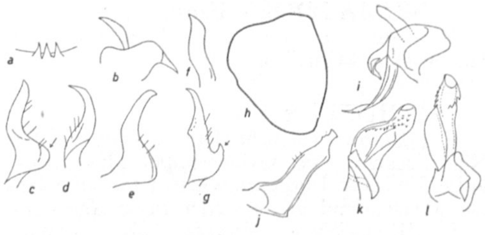

Fig. 52. *Nycheuma idas* (Fenn.) *ssp. nilotica* ssp.n.: a medio-ventral process of pygophore; b anal tube from side; c—e stylus. — *N. idas* (Fenn.): f—g stylus. — *Oaristes impictus* sp.n.: h pygophore from side; i anal tube; j stylus; k—l penis.

MALAXODES Fenn.

M. farinosus Fenn. — 78—79, 1 ex. E. Africa.

NYCHEUMA Fenn.

N. menius Fenn. — 52, 1 ex. Endemic.

N. (Dicranotropis) endymion (Fenn.) — 83, 1 ex.; 72, 3 exx.; 72—71, several exx.; 74, 1 ex. Senegal.

N. (Dicranotropis) ibadanensis (Muir) — 77, 1 ex. Nigeria, Cape Verde Is.

N. (Dicranotropis) idas (Fenn.) — 52, 1 ex.; 72, 1 ex.; 70—72, several exx. Previously known from Ivory Coast.

N. idas (Fenn.) ssp. *nilotica* ssp.n.

Like the nominate form, but 1) median tooth of the medio-ventral process of pygophore (Fig. 52 a) as large as the lateral ones (smaller than the others in the nominate form), 2) appendages of anal tube (Fig. 52 b) somewhat shorter and 3) subbasal lobe of stylus (Fig. 52 c—e) rounded (sharply produced in the nominate form, Fig. 52 j—g).

19, 1 paratype; Blue Nile, Singa- Damazin, 1 ♂, type, and several paratypes, 14—17. XI. 1962; 23, several paratypes; 21, several paratypes.

N. (Dicranotropis) sectator (Fenn.) — 23, 1 ex. Previously known from Cameroun.

NUMATODES Fenn.

N. antricauda Fenn. — 72, 1 ex. Previously known from Mauritius.

EUIDELLA Pt.

E. (Delphax) horvathi (Lall.) — Sudan, "The Nile", several exx. Gyldenstolpe, Mus. Stockholm. Endemic. Uncertain whether the specimens have been found in the Sudan or in Uganda.

E. (Dicranotropis) tortuosa (Ldb.) — Many exx. from 24—24 a; 25; 22—25; 21; 84; 58; 51; 52; 72; 74; 30 km N of 71; 62. Near Terakeka found on *Tamarindus indicus*. Previously known from Togo. Correct genus uncertain, probably not a proper *Euidella*.

EUIDOPSIS Rib.

E. palaemon Fenn. — 68, 1 ex.; 66—67, 1 ex. Endemic.

ANEUIDES Fenn.

A. ilaira Fenn. — 72, 3 exx. Endemic species and genus.

MICREUIDES Fenn.

M. verres Fenn. — 72—71, several exx.; 74, 1 ex. Endemic genus and species.

EUIDASTOR Fenn.

E. milonius Fenn. — 22—25, 1 ex.; 72—74, 1 ex.; 68, 1 ex.; 60, 1 ex.; 73—75, 1 ex.; 66—67, 1 ex. Endemic genus and species.

E. pansa Fenn. — 77, 1 ex. Endemic.

PERKINSIELLA Kk. (= *Araeopides* Rib.)

P. dorsata (Mel.) (=*insignis* Dist., *picta* Rib.)

I have previously (1962:22) discussed the identity of the genera *Araeopides* and *Perkinsiella* and the species *insignis* and *picta*. Dr. FENNAH has informed me in a letter that the oldest name for this species is *dorsata* (Mel.). I accept this, although there is a slight difference in the shape of the apical part of the styli between the African specimens and the others (Fig. 53 d—f). Additional material is needed from various parts of the distribution area of the species to establish whether *insignis* represents a separate geographical race.

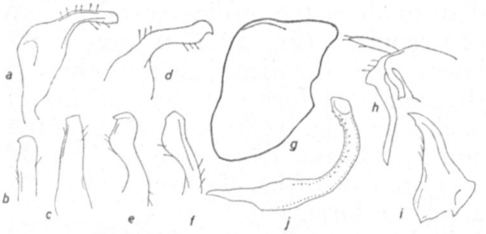

FIG. 53. *Perkinsiella dorsata* (Mel.): d stylus; e—f apex of same; broad aspect; a—c stylus of a specimen from Israel. — *Oaristes phragmitis* sp.n.: g pygophore from side; h anal tube; i stylus; j penis.

Numerous exx. from 24—24 a; 28; 26; 29; 22—25; 23; 21; 19; 84; 40; 41; 72; 60; 74. Palaeotropical.

P. rivularis Lv. — 2, 1 ex. Previously known from Israel and Egypt.

PEREGRINUS Kk. (= *Hagamiella* Fenn.)

P. maidis (Ashm.) — 9, 1 ex.; 22—25, several exx.; 21, several exx.; 63—62, 1 ex.; 68, 1 ex.; 77, 3 exx.; 62, 2 exx.; 66—64, 2 exx. Intertropical.

P. iocasta (Fenn.) — Several exx. from 51; 52; 63—62; 70—72; 68; 74; 60; 62; 66—64. W. Africa, Uganda.

HAPALOMELUS St.

H. ruandanus Fenn. — 79, 2 exx.; 77, 2 exx. Ruanda.

H. onytes Fenn. — 62, 3 exx. Endemic.

EUMETOPINA Bdd.

E. hancocki Muir? — 62, 2 exx. Uganda. Identification somewhat tentative in absence of males.

NEOGADORA Fenn.

N. nitens Fenn. — 64—63, 2 exx.; 73—75, 1 ex. Endemic genus and species.

CURTOMETOPUM Muir

C. turneri Muir — 41, 1 ex.; 46—45, 2 exx. At lamp in sandy localities. Previously known from S. Africa.

RHINOTETTIX St.

R. fuscipennis St. ? — 66—67, 1 ex. Identification uncertain, since the only avaible specimen, a male, is parasitized. S. Africa.

NATALIANA Muir

N. lineata Muir — 62, 1 ex. Previously known from S. Africa.

EMBOLOPHORA St.

E. monoceros St. — Darfur: Jebel Marra (Fennah 1969); Upper Nile: White Nile, Hillet Nuer (Muir 1929:192); 74, many exx. Swept from grasses on a wet shore of the Nile. Also known from S. Africa.

CORBULO Fenn.

C. dodona Fenn. — 22—25, 2 exx., 62, 3 exx. Palaeotropical. Previously known from Australia.

NILAPARVATA Dist.

N. maeander Fenn. — Many exx. from 25; 21; 45; 51; 52; 72; 72—75; 60; 61—52. Previously known from W. Africa (French Guinea, Senegal, French Sudan).

N. muiri Cld. — Several exx. from 51; 52; 72; 72—75; 68; 74; 60; 61—52. Intertropical (Puerto Rico, Senegal).

N. camilla Fenn. — 68, 1 ex.; 62, 1 ex. Endemic.

XANTHODELPHAX Wgn.

X. (Delphacodes) graminis (Ldb.) — 33—31, 1 ex.; 30—31, numerous exx. On *Panicum turgidum* in sandy places. Eremian. Previously known from the Cape Verde Is.

CORONACELLA Fenn.

C. (Delphacodes) turneri (Muir) — Several exx. from 22—25; 23; 21; 45; 52; 63—62; 72—74; 68; 77; 62; 66—64. W. Africa (Guinea, French Sudan, S. Africa).

TOYA Dist. (=*Metadelphax* Wgn.)

T. (Calligypona) propinqua (Fb.) Many exx. from 6; 7; 2 (Dlabola 1964:617); 17; 24—24 a; 23; 21; 29; 9; 84; 85—84; 83; 30—31; 52; 72—74; 72—71; 68; 77; 60; 74; 66—67. Cosmopolitan.

T. (Delphacodes) bridwelli (Muir) — 30 km N of 71, 1 ex. Nigeria.

T. (Delphacodes) nigeriensis (Muir) — 21, several exx. Nigeria.

T. (Delphacodes) varia (Hesse) — Many exx. from 7; 24—24 a; 29; 22—25; 23; 21; 52. S. Africa.

T. (Delphacodes) ceresensis (Muir) — 7, 1 ex.; 21, 1 ex.; 52, several exx.; 74, 1 ex.; 76, 1 ex. Cape Verde Is., S. W. Arabia, S. Africa.

T. (Delphacodes) thomasseti (Muir) — 62, 1 ex. Previously known from Rodriguez.

T. demophoon Fenn. — 52, 1 ex. Nigeria, Ethiopia.

T. menedemus Fenn. — 77, 1 ex. Endemic.

T. camena Fenn. — 70—72, 1 ex. Endemic.

T. canidia Fenn. — 30 km N of 71, 4 exx. Endemic.

T. mandonius Fenn. — 74, 1 ex. Endemic.

T. narcissus Fenn. — 78—79, 1 ex. Endemic.

T. (Calligypona) hispidula (Ldb.) — 7, several exx.; 2, 1 ex.; 19, several exx.; 21, 3 exx.; 35, 1 ex. Eremian (Canary Is., Morocco, Egypt).

T. (Delphacodes) sporoboli (Ldb.) — Many exx. from 1; 6; 7; 2; 17; 9; 24—24 a; 21; 45 Eremian (Cape Verde Is., Egypt).

T. (Delphacodes) epimelas (Fenn.) — 23, 1 ex.; Bahr el Ghazal, R. Malmul, 1 ex., 21—22. II. 1963; 49, 1 ex.; 51, 1 ex.; 52, 1 ex.; 72, 2 exx.; 70—72, several exx.; 60, several exx. Ivory Coast, Senegal.

T. (Delphacodes) hargreavesi (Muir) — 22—25, 1 ex.; 21, 2 exx.; 72, numerous exx.; 68, 2 exx.; 77, 1 ex.; 74, 4 exx.; 30 km N of 71, several exx. Previously known from Sierra Leone.

T. (Delphacodes) actaeon (Fenn.) — 21, 1 ex.; 41, 1 ex.; 52, several exx.; 72, several exx.; 72—74, 2 exx.; 72—71, 1 ex.; 70—72, 2 exx.; 68, 1 ex.; 63—62, 1 ex.; 64—63, 1 ex.; 60, several exx.; 74, 1 ex.; 30 km N of 71, several exx.; 62, 1 ex.; 66—64, 2 exx. Previously known from Senegal. Probably not a true *Toya*.

STOLBAX Fenn.

S. callisto Fenn. — 78—79, 1 ex.; 77, 5 exx. Endemic genus and species.

THYMOBARES Fenn.

T. (Chloriona) longispinus (Muir) — 77, 2 exx. S. Africa, Mauritus.

OARISTES Fenn.

O. (Chloriona) snelli (Muir) — 79, alpine zone, 1 ex.; 72, 2 exx.; 72—74, 1 ex.; 77, 1 ex.; 73—75, 2 exx. Previously known from Zanzibar.

O. phragmitis sp.n.

Length 3—3.5 mm. Like *O. snelli* (Muir), but paler, whitish stramineous. Frons without a dark apical spot, somewhat shorter, 2.2 × as long as broad. Stylus (Fig. 53 i) shorter and broader. Dorso-lateral angles of pygophore (Fig. 53 g) unarmed. The longer appendage of anal tube shorter and penis more strongly curvate (Fig. 53 h, j).

Darfur: Safaha-Abu Matariq, 1 ♂, type and

3 paratypes, 30. IV. — 2. V.1963. On *Phragmites communis.*

O. impictus sp.n.

Length 3.25—3.5 mm. Like *O. snelli*, but paler stramineous. Clypeus and frons without black margins. Median carina and sides of pronotum and of scutellum orangish. Penis short; side lobes of pygophore short, broadly rounded, unarmed, and styli dissimilarly shaped (Fig. 52 h—l).

O. distinctus (Muir) also has an unmarked face, but differs in, e.g., the strongly produced side lobes of the pygophore.

22—25, 1 ♀ paratype; Equatoria, Juba, 1 ♂, type, 27. II — 2. III. 1963.

SOGATODES Fenn.

S. (Dicranotropis) cubanus (Crawf.) (=*Chloriona panda* Fenn., *Megamelus flavolineatus* Muir) — 21, 3 exx.; 52, 1 ex. Intertropical (the West Indies, Nigeria).

SOGATELLA Fenn.

Recently revised by FENNAH (1963).

S. suezensis (Mats.) (=*vibix* Hpt.) — Many exx. from 1; 2; 6; 6—7; 7; 29; 21; 9; 35; 30 km N of 71. Holomediterranean.

S. nigrigenis (Jac.) — 21, several exx.; 68, 2 exx. Uganda.

S. parakolophon sp.n.

Length 3.25—3.5 mm. Pale ochraceous. Genae black as in *nigrigenis.* Vertex and median band of pronotum and of scutellum whitish, sides of the latter golden brown. Elytra hyaline, slightly tinged with yellow brown, unmarked, veins concolours. Dorsum of abdomen ± embrowned. Under surface of mesothorax with a large dark spot on either side. Legs pale.

Gracile. Vertex 1.4 × as long as broad, basal compartment slightly broader than long (10:9). Frons 2.67 × as long as broad, nearly parallel-sided in lower two-thirds. 1st antennal joint 1.33 × as long as broad, 2nd 2.5 × as long as 1st. Lateral carinae of pronotum diverging caudad, straight, not reaching basal margin. Male genitalia in Fig. 54 a, c, e—g, o.

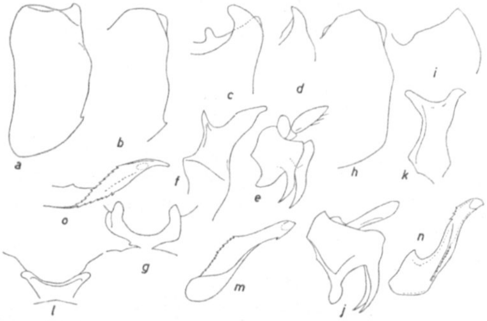

FIG. 54. *Sogatella parakolophon* sp.n.: a pygophore from side; c left dorso-lateral angle of same, dorsal aspect; e anal tube; f stylus; g diaphragm; o penis. — *S. suezensis* (Mats.): b pygophore from side; d left dorso-lateral angle of same, dorsal aspect. — *S. yei* sp.n.: h pygophore from side; i left dorso-lateral angle of same, dofsal aspect; j anal tube; k stylus; l diaphragm; m—n penis .

Resembles *S. kolophon* (Kk.), *S. catoptron* Fenn. and *S. suezensis* (Mats.) in the shape of the styli, but differs from them in the dorso-lateral angles of the pygophore which are considerably produced and recurved mesad, and in the long vertex and frons. In *S. nebris* Fenn. the longer branch of the stylus is much narrower, the penis is slenderer, the vertex shorter and the genae not black.

84, 1 ♂ paratype; Equatoria Nimule, 1 ♂, type, 11—13. III. 1963; 60—70, 1 ♂ paratype; 58, 1 ♀ paratype.

S. nigeriensis (Muir) — 7, 2 exx.; 28, 1 ex.; 22—25, several exx.; 23, several exx.; 21, many exx.; 84, 1 ex.; 41, 1 ex.; 45, several exx.; 58, 1 ex.; 72—74, 1 ex.; 72—71, 1 ex.; 30 km N of 71, several exx. N. Africa (Canary Is., Egypt), W. Africa and Uganda, a separate subspecies, ssp. *troilus* Fenn., in Madagascar.

S. timaea Fenn. — 71, 4 exx. Endemic.

S. manetho Fenn. — 74, 1 ex.; 30 km N of 71, 1 ex.; 66—64, 1 ex. S. Rhodesia.

S. yei sp.n.

Length 3.5 mm. Colouring as in *S. parakolophon*, but elytra with a longitudinal fuscous band starting from apex and extending to upper subapical cross veins.

Gracile. Vertex 1.25 × as long as broad, basal compartment 1.26 × as broad as long. Frons 2.29 × as long as broad, nearly parallel-sided in lower half, then moderately tapering upwards. 2nd antennal joint 2.5 × as long as 1st. Lateral keels of pronotum diverging caudad, slightly arcuate, not reaching basal margin. Male genitalia in Fig. 54 h—n.

The following four species resemble *S. yei* in the shape of the styli, but can be distinquished as follows:

S. capensis (Muir): dark coloured, e.g. frons dark fuscous; caudal margin of pygophore dissimilarly curved in profile; penis much slenderer, sharp-tipped.

S. nigeriensis (Muir): clavus with a dark apical spot.

S. manetho Fenn.: upper part of caudal margin of pygophore regularly rounded in profile, apical margin of stylus only slightly insinuated.

S. camptistylis Fenn.: upper part of caudal margin of pygophore more regularly curvate in profile; apical processes of stylus thinner; penis slenderer.

Equatoria: Yei-Maridi, 1 ♂, type, 13—14. IV. 1963.

S. petax Fenn. — 70, 2 exx.; 30 km N of 71, several exx. Previously known Egypt and Jordania.

S. camptistylis Fenn. — 74, 2 exx. Uganda.

MATUTINUS Dist.

M. ligea Fenn. — Darfur: Jebel Marra, Dimbliti, 1 ex., 27. V. 1932, Steele, British Museum. Endemic.

M. (Calligypona) typhae (Ldb.) — 29, 4 exx.; 84, 1 ex. N. Africa (Canary Is. — Egypt, Israel).

M. (Sogata) neovittacollis (Muir) — 74, 1 ex.; 76, 1 ex. S. Africa (Pondoland).

SARDIA Mel.

S. rostrata Mel. — Many exx. from 7; 17; 24—24 a; 28; 29; 21; 22—25; 32; 45; 85—84; 74. Palaeotropical (Cape Verde Is. — Australia).

S. vindex Fenn. — 52, many exx.; 70—72, several exx.; 72, 1 ex.; 74, 1 ex.; 61—52, 2 exx. Endemic.

ERIPISON Fenn.

E. illex Fenn. — 52, 1 ex. Cameroon.

TRILORIS Fenn.

T. alcanor Fenn. — 24—24 a, 1 ex.; 38—37, several exx. On *Cyperus* sp. in brooks with sandy bottoms. Endemic.

T. antea Fenn. — 52, 1 ex. Endemic.

SEMBRAX Fenn.

S. demades Fenn. — 68, 1 ex. Endemic.

S. ismenias Fenn. — 62, 1 ex. Endemic.

ORCAENAS Fenn.

O. juterna Fenn. — 79, 1 ex. Endemic genus and species.

STROPHALINX Fenn.

S. echo Fenn. — 72—71, 1 ex. Endemic genus and species.

ISOGAETIS Fenn.

I. thymoma Fenn. — 62, 2 exx. Endemic genus and species.

ACHILIDAE

CNIDUS St.

C. naevius Jac. — 62, 2 exx. E. Africa, Zaire.

C. variegatus St. — 41, 3 exx.; 81—82, 1 ex.; 74, 1 ex. Zaire, Angola, E. and S. Africa.

AKOTROPIS Mats.

A. quercicola Lv. — 24—24 a, 2 exx.; 25, 1 ex.; 22 —25, several exx.; 23, several exx.; 21, 1 ex.; 41, several exx.; 39, 1 ex.; 38—37, 2 exx.; 46—45, 1 ex.; 72, 2 exx.; 81—82, 2 exx. On *Gardenia ternifolia.* At lamp. Previously known from Israel and Turkey.

A. fulgens sp.n.

Length 3 mm. Head and pronotum yellow-brown, genae with a squarish black spot below antennae. Scutellum with a golden tinge on disk, margins paler. Elytra darker brownish smoky, veins concolorous. Abdomen pale rusty brown. Legs ochraceous.

Like *A. quercicola* Lv., but somewhat more robust and vertex shorter, 0.88 × as broad as long. Easily distinguished from *A. quercicola* by the dark elytra and the short vertex.

South Yemen, Lahej-Dhala road, 1 ♀, type and 1 ♀ paratype, 9—15. VII. 1963. Somalia, Daragodleh, 1 ♀, paratype, 25—27. VI. 1963.

MLANJELLA Fenn.

M. sp. near *bivittata* Syn. — 77, 1 ex. At lamp in a rain forest.

BALLOMARIUS Jac.

B. dartevellei Syn. — 63—62, 3 exx.; 62, several exx. Previously known from Zaire.

B. kivuensis Syn. — 66—67, 2 ex. Zaire.

EPIUSANELLA Syn.

E. bimaculata Syn. — 62, 1 ex. Previously known from Zaire.

MEENOPLIDAE

Recently revised by SYNAVE (1957c)

Nisiinae

NISIA Ma.

N. atrovenosa (Leth.) — 17, 1 ex.; 22—25, several exx.; 84, 3 exx.; 50, 2 exx.; 58, 2 exx.; 51, 2 exx.; 52, 1 ex.; 77, 1 ex.; 72—71, 1 ex.; 74, several exx.; 61—52, 2 exx.; 66—67, 1 ex. On grasses in moist places. Palaeotropical.

KERMESIA Mel.

K. albinervosa Muir — 62, 1 ex. W. Africa.

K. inornata Muir

Length 4.5 mm. Yellow-brown. Eyes dark. Scutellum laterally tinged with fulvous. Elytra whitish yellowish brown.

Relatively robust. Frons nearly parallel-sided, strongly concave. Male genitalia: Pygophore as in the following species. Anal tube (Fig. 55 b) short and broad, apical margin only shallowly concave, apico-lateral angles small, blunt. Stylus (Fig. 55 d) with three apical lobes. Penis as in Fig. 55 a, stem with a sharp tooth on ventral surface, the basal lobe apically bifurcate.

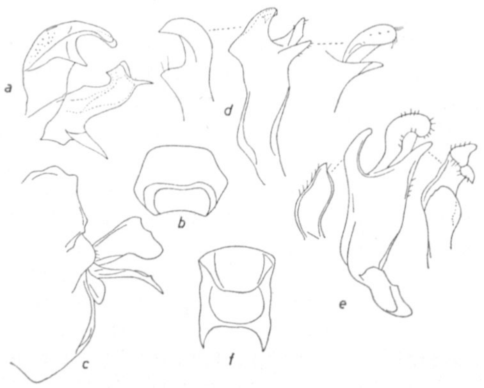

FIG. 55. *Kermesia inornata* Muir: a penis; b anal tube, dorsal aspect; d stylus. — *K. calypso* sp.n.: c pygophore and penis from side; f anal tube dorsal aspect; e stylus.

Easily distinguished by the yellowish elytra (whitish in the other unicoloured species) and the male genitalia.

68, 4 exx.; 66—67, 1 ex. In swampy meadows. Sierra Leone, Zaire.

K. calypso sp.n.

Length 5—5.5 mm. Like the preceding, but more robust and somewhat darker: scutellum with two darker median bands and elytra slightly smoky. Male genitalia: Pygophore and penis in Fig. 55 c. Anal tube (Fig. 55 j) longer than broad, parallel-sided, apical margin broadly insinuated, apico-lateral angles sharp. Stylus (Fig. 55 e) incrassate, with three apical lobes.

Equatoria: Lotti forest, 1 ♂, type and several paratypes, 14—17. III. 1963.

K. pudica Syn.

Length 6.5 mm. Like *K. inornata*, but much more robust. Male genitalia: Pygophore, anal tube and penis in Fig. 56 a. Stylus (Fig. 56 b, c) slender, rather straight, with an upcurved tooth at about the middle.

64—63, 1 ex. Zaire. 66—67, many exx.; 66—64, 2 exx. In swamps. Zaire.

EPONISIA Mats.

E. albovittata Fenn. — 63—62, several exx.; 64—63, 2 exx.; 66—67, many exx. In swamps. Previously known from Zaire and Ruanda.

E. brunnescens Syn. — 63—62, 3 exx.; 68, 3 exx.; 62, 1 ex.; 66—67, many exx.; 66—64, 2 exx. In swamps. Zaire.

E. pallida sp.n.

Length 5—6 mm. Pale golden brown. Extreme lateral margins of vertex and of frons dark. Pronotum and scutellum medially whitish, with a faint longitudinal orangish keel, laterally orangish. Elytra hyaline, golden yellow,cells of apical part with faint fuscous shadows; veins whitish, apical veins with a triangular fuscous spot in margin; a hyaline, whitish median spot between apical and subapical areas.

Elongate, large. Frons strongly concave, parallel-sided, but just before clypeus slightly expanded. Venation of elytra as in *albovittata.* Male genitalia: Stylus as in Fig. 56 d—e. Penis (Fig. 56 f) with 3 pairs of long, falcate basal appendages, stem strongly expanded apicad, triangular in ventral aspect.

Resembling *E. brunnescens* Syn., but bigger and with dissimilar genitalia. *E. albinervosa* Muir (Uganda), known in the female sex only, is dark fuscous, with the carinae of the head and of the thorax lighter, and the elytra fuscous with white veins.

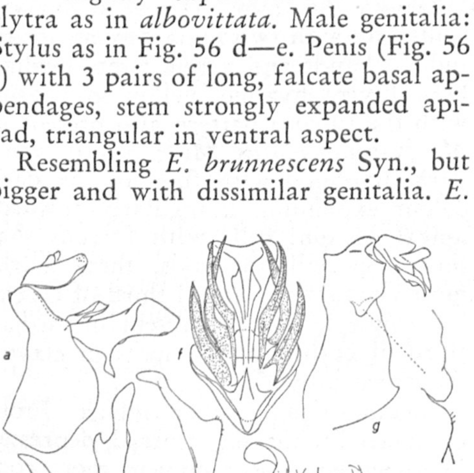

FIG. 56. *Kermesia pudica* Syn.: a pygophore, anal tube and penis from side; b—c stylus. — *Eponisia pallida* sp.n.: d—e stylus; f penis. — *Anigrus lobulifer* sp.n.: g pygophore and anal tube from side; h anal tube, dorsal aspect; i penis.

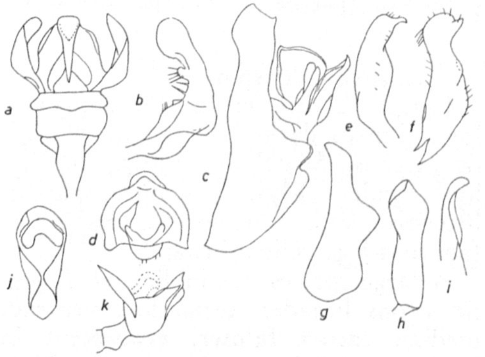

FIG. 57. *Anigrus ochreatus* sp.n.: a penis; b stylus. — *Meenoplus satyrus* sp.n.: c pygophore and penis, lateral aspect; d anal tube, dorsal aspect; e—f stylus. — *M. suavis* sp.n.: g pygophore from side; h—i stylus; j anal tube, dorsal aspect; k penis.

Equatoria: Ibba- Yambio, 1 ♀, type and 4 paratypes, 16. IV. 1963. In a swamp.

Meenoplinae

ANIGRUS St.

A. lugens St. — 7—8, 1 ex.; 19, 1 ex.; 9, 1 ex; 24—24 a, 2 exx.; 21, many exx.; 84, 2 exx.; 85—84, 1 ex.; 41, 1 ex.; 39, 1 ex.; 30—31, 1 ex.; 44, 1 ex.; 46—45, 1 ex.; 81—82, many exx.; 70—72, 2 exx.; 64—63, 1 ex.; 60, 1 ex.; 30 km N of 71, several exx.; 76—81, 1 ex. Very variable in size. S. Africa, Zaire.

A. lobulifer sp.n.

Length 5 mm. A dark brown species resembling *A. lugens* in general appearance, but differing in the male genitalia: Pygophore (Fig. 56 g) with a special rounded lobe in the otherwise rather straight caudo-lateral margins of the segment (distinctly insinuated and not lobate in *lugens).*Anal tube (Fig. 56 h) longer and more narrowly and deeply insinuated apically in dorsal aspect. Penis (Fig. 56 i) and stylus as in *lugens.*

Somalia, Hargeisa, 1 ♂, type, 23—28. VI. 1963.

A. amaryllis sp.n.

Length 5.5 mm. Head ochraceous yellow, clypeus darker. Pronotum whitish ochraceous. Scutellum brown, median keel pale. Elytra semitransparent, brownish, veins concolorous. Under surface and legs yellow-brown.

A large species, resembling *A. lugens* St. Frons broader, expanding ventrad, median carina fainter, evanescent in lower part. Elytra as in *lugens*. Male genitalia: Caudal margin of side lobe of pygophore (Fig. 58 a) with a deep median incision. Apices of anal tube (Fig. 58 b) with a claw-like process. Stylus in Fig. 58 c. Sclerified median part of penis as in Fig. 58 d, the lateral lobes of the common shape.

Kassala: Jebel Elba, 1 ♂, 1. II. 1933, Priesner, my collection.

A. vicinus Dlab. — Many exx. from 24—24 a; 25; 26; 22—25; 23; 21; 84; 85—84; 36—40; 39; 81—82; 60; 66—64. Possibly eremian. Previously known from Iran, Israel, and Arabia.

A. ochreatus sp.n.

Length 4—4.25 mm. Greyish ochraceous. Clypeus brown, with a pale median stripe. 1st antennal joint usually dark brown. Scutellum with brown basal triangles. Elytra uniformly greyish ochraceous, hyaline, veins pale. Abdomen dark brown, segmental margins pale.

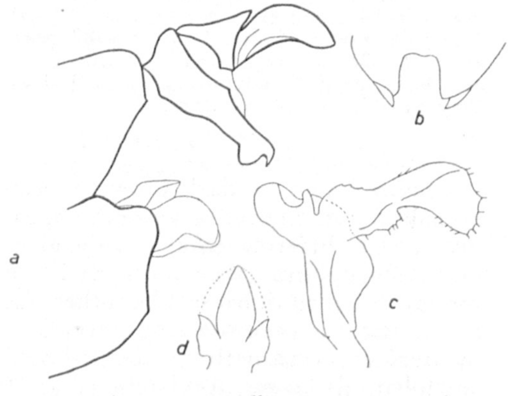

Fig. 58. *Anigrus amaryllis* sp.n.: a pygophore anal tube and penis from side; b apex of anal tube, dorsal aspect; c stylus; d sclerified median part of penis.

Head as in *A. vicinus*, but frons broader and medially more convex, median keel present as a ± faint elevation only in upper part. Male genitalia as in Fig. 57 a—b.

Resembling *A. vicinus* Dlab., but differing in the faint median carina of the frons and in the shape of the penis. *A. sordidus* St. has fuscous marks in the elytra, the penis is narrower and the apex of the stylus is considerable longer.

South Yemen, Dhala, 1 paratype, 25. IX. 1937; Jebel Harir, 1 ♂, type, 1—2. XI. 1937; Jebel Jihaf, 1 paratype, 7. X. 1937; Jebel Jihaf, Wadi Lejij, 1 paratype, 28. IX. 1937, Scott and Britton, British Museum, paratypes also in my collection.

MEENOPLUS Fb.

M.satyrus sp.n.

Length 4.5 mm. Yellowish brown. Scutellum with two faint, fuscous longitudinal bands and a fine white median keel. Elytra hyaline, yellowish brown, with the fuscous pattern also present in *M. fuscomaculatus* Mel.: apical veins dark, bordered with fuscous, the dark colour expanding triangularly towards apical margin; cells with fuscous shadows especially at ends, these marks most abundant in apical third of elytra, but single spots also present in median third of corium and 3 spots in clavus. Abdomen brownish.

Medium-sized, rather robust. Frons distinctly broadening ventrad, depressed in upper part, near clypeus more convex. Vertex short. Median keel of scutellum distinct, lateral keels obsolete. Elytral venation much as in *M. turneri* Muir, but 3rd apical vein bifurcate. Male genitalia: Anal tube (Fig. 57 d) short, broader than long. Pygophore and penis in Fig. 57 c, the latter with two, roughly quadrangular, dorsal la-

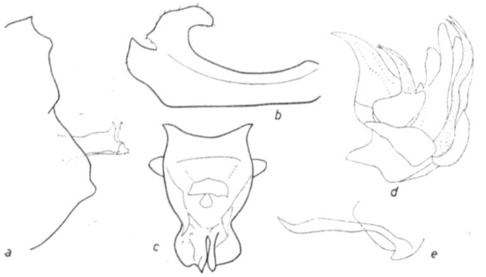

Fig. 59. *Meenoplus adonis* sp.n.: a pygophore and penis from side; b stylus; c anal tube from above. — *Elasmoscelis garambaensis* Syn.: d penisfrom side; e left side of same, ventral aspect.

mellae. Stylus (Fig. 57 e—f) gracile and rather straight.

Close to *M. fuscomaculatus* (Mel.) (E. Africa), which, however, is bigger, length 6 mm., and has a dark roundish spot at the end of either apical vein of the elytra. *M. turneri* Muir (S. Africa) has narrow and curvate styli with a blunt apex. *M. rotula* Fenn. (Cameroons) is larger, over 6 mm in length and has entirely different genitalia.

24—24 a, 3 paratypes; Singa-Damazin, 1 ♂, type, 15—17. XI. 1962; 23, 1 paratype.

M. suavis sp.n.

Length 3.2 mm. Like the preceding, but 1) much smaller, 2) somewhat paler, fuscous marking of elytra fainter, 3) frons broader, nearly parallel-sided and 4) male genitalia different: Anal tube (Fig. 57 j) long and narrow. Side lobes of pygophore (Fig. 57 g) with a bluntly rounded median expansion. Stylus and penis in Fig. 57 h—i, k.

Blue Nile: Abu Hashim-Galegu, 1 ♂, type, 23—24. XI. 1962.

M. adonis sp.n.

Length 4.75 mm. Whitish ochraceous. Antennae and sides of head more yellowish. Scutellum strongly shiny, laterally golden, medially pale. Elytra whitish ochraceous, apical veins fuscous; a spot in corium at the tip of clavus and two spots in the opposite part of costal margin fuscous; also commissural margin of clavus with a small dark spot.

Frons rather broad, broadest below antennae, medially flat, lateral margins strongly upcurved. Scutellum with a distinct median carina, lateral keels very faint. Male genitalia as in Fig. 59 a—c.

Easily distinguished by the male genitalia.

Kassala: Erkowit, 1 ♂, type, 7—10. VII. 1961.

M. ianthe sp.n.

Length 3.5 mm. Golden yellow. Scutellum medially more whitish. Elytra hyaline, golden yellow, veins generally concolorous, only apical veins dark brown.

Frons broadening ventrad, strongly depressed medially. Vertex short. Median carina of scutellum distinct, lateral keels more obsolete. Elytra about as in *M. rutshuruensis* Syn. Male genitalia (Fig. 60 a—b) unique.

Resembling *M. rutshuruensis* Syn. (Zaire), but genitalia entirely different.

Equatoria: Nimule, 1 ♂, type, 11—13. III. 1963.

M. inimvuensis Syn.

Length 5—5.5 mm. Yellow-brown. Pronotum whitish yellow. Scutellum

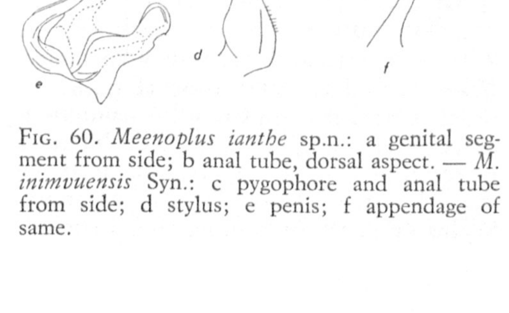

Fig. 60. *Meenoplus ianthe* sp.n.: a genital segment from side; b anal tube, dorsal aspect. — *M. inimvuensis* Syn.: c pygophore and anal tube from side; d stylus; e penis; f appendage of same.

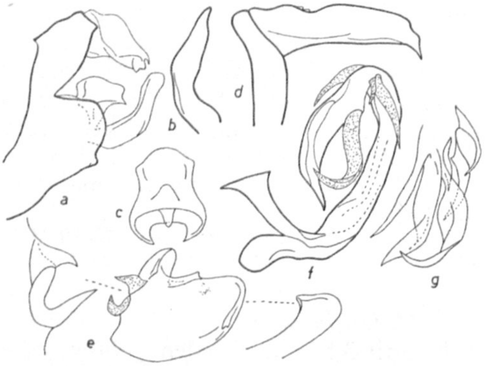

FIG. 61. *Meenoplus kassiphone* sp.n.: a pygophore, anal tube and penis from side; b stylus; c anal tube, dorsal aspect. — *Malenia cydippe* sp.n.: d pygophore and anal tube from side; e stylus; f penis; g apex of same (another specimen).

golden. Elytra brownish smoky, becoming darker apically, veins concolourous. Abdomen dark, sides narrowly pale.

Robust. Frons broadening ventrad, relatively convex, depressed only near upper margin. Median keel of scutellum distinct, lateral keels nearly absent. 3rd apical vein of elytra bifurcate. Male genitalia unique: Anal tube (Fig. 60 c) very long, with a broad basal membrane (marked with broken line in the figure), side lobes of pygophore (Fig. 60 c) broadly insinuated. Stylus (Fig. 60 d) with a long subapical process. Penis (Fig. 60 e—f) with two long, bifurcate basal processes.

52, 1 ex.; 63—62, 2 exx.; 62, 1 ex.; 66—64, 2 exx. Zaire.

M. kassiphone sp.n.

Length 5—6.2 mm. Like the preceding, but more robust and dark brown, with only head and legs somewhat paler. Male genitalia: Anal tube (Fig. 61 c) short, apical margin broadly insinuated, apico-lateral angles sharp. Side lobes of pygophore (Fig. 61 a) with a deep V-shaped notch. Penis (Fig. 61 a) short. Stylus (Fig. 61 b) simple, sharp-tipped.

Equatoria: Lotti forest, 1 ♂, type and 1 ♀ paratype, 14—17. III. 1963.

M. nausikaa sp.n.

Length 2.5 mm. Blackish brown. Upturned lateral margins of frons and vertex yellowish brown. Margins of pronotum narrowly and tegulae whitish. Scutellum black. Elytra dark coffee-brown, costal cell paler, veins concolourous. Legs dark brown, hind tibiae and tarsi yellowish brown.

Very small, but relatively robust. Clypeus convex. Frons broadening markedly ventrad, rather convex in lower two-thirds, dorsally somewhat concave. Vertex very short. Scutellum with a faint median carina, lateral keels absent. Elytra with two bifurcate apical veins.

Easily distinguished by the very small size and the dark colouring.

Equatoria: Kapoeta-Boma, 1 ♀, type, 26—27. III. 1963.

DERBIDAE

MALENIA Hv. (= *Cedusa* auct.)

M. fusca (Muir)

The Sudanese specimens possibly represent a related species differing from the typical *fusca* in the yellow-brown head and thorax. Anyhow, according to the original description (MUIR 1928: 500), one specimen of the type series is similarly coloured.

77, 2 exx. S. Africa.

M. cydippe sp.n.

Length 3.2—5.2 mm. Shiny. Light yellow-brown. Frons sometimes with a red median dash. Median keel of scutellum often orangish. Elytra hyaline, yellowish brown, apical part sometimes slightly infuscate, veins concolorous. In one specimen there is a longitudinal fuscous band extending from the base of the clavus caudad across the corium, broadening apicad and filling most of the apex of the elytron. Wings hyaline, veins concolorous of slightly darker.

Clypeus long and narrow, medially carinate. Frons distinctly broadening ventrad, broadest at the beginning of the lower third, then tapering towards clypeus, ecarinate, lateral margins strongly upturned. Vertex distinctly broader than long. Median keel of scutellum distinct, lateral keels rather obsolete. Male genitalia: Anal tube (Fig. 61 d) very long. Side lobes of pygophore short, shallowly curvate. Stylus as in Fig. 61 e. Penis (Fig. 61 f—g) with a long stem, provided with falcate appendages as indicated in the figure. Pregenital plate (♀) bluntly triangular.

Most closely related to *M. aburiensis* (Muir), but differing in, e.g., the shape of the styli. *M. natalensis* (Muir) is bigger, with a dark abdomen.

83, 1 paratype; Equatoria, Nimule, 1 ♂, type and several paratypes, 11—13. III. 1963; 62, 1 paratype.

PROUTISTA Kk.

P. fritillaris (Bh.) — 83, 2 exx.; 63—62, 2 exx.; 61, 1 ex., British Museum; 62, 1 ex. Swept from a swamp. Tropical Africa.

ZORAIDA Kk.

Z. sudanica Syn. — 77, 1 ex. At lamp in a rain forest. Endemic.

PARAPHENICE Muir

P. dissimilis Syn. — 62, 1 ex. Endemic.

DIOSTROMBUS Uhl.

D. whitfieldi Muir — 22—25, 2 exx.; 39, 1 ex., British Museum. Endemic.

D. apicalis miniacea Muir — 83, 1 ex. East Africa.

D. hancocki Muir — 66—67, 1 ex. East Africa.

KAMENDAKA Dist.

K. albomaculata Muir — 25, 2 exx.; 22—25, 1 ex.; 64—63, 1 ex.; 62, 1 ex. Previously known from W. Africa (Sierra Leone).

K. ugandensis Muir — 77, 1 ex. Previously known from Uganda.

K. hyalina Syn. — 64—63, 1 ex. Endemic.

K. kordofana Syn. — 38—37, numerous exx. On *Borassus flabelliferus*. Endemic.

LOPHOPIDAE

LOPHOPS Spin.

L. servillei Spin. — 22—25, 1 ex.; 64—63, 1 ex.; 62, 1 ex. W. Africa (Cameroon etc.), Zaire, E. Africa.

L. angustipennis St. — 26, 2 exx.; 84, 1 ex.; 85—84, Geil, 2 exx.; 30—31, 1 ex.; 46, 2 exx; 46—45, several exx.; 53, 3 exx.; 54, 1 ex.; 51, 1 ex.; 70, 1 ex. On *Gramineae (Phragmites* etc.) in shore meadows. Eremian (N. Africa: Tunisia, Egypt, Senegal).

ELASMOSCELIS Spin.

Recently revised by SYNAVE (1958: 19—24) and 1962:23—35.

E. cimicoides Spin. — 83, 1 ex.; 63—62, 1 ex.; 64—63, 2 exx.; 62, 1 ex. Zaire, E. and S. Africa.

E. trimaculata Wk. — 63—62, 1 ex.; 64—63, 1 ex. W. and E. Africa, Zaire, Ethiopia, Socotra.

E. garambaensis Syn.

Length 6—7.2 mm. Like *E. trimaculata*, but penis (Fig. 59 d—e) entirely different, stout, provided with two pairs of falcate appendages, the ventral pair long and slightly diverging apicad, the dorsal pair shorter and lying close to each other, moreover a long unpaired dorsal horn also present.

70, 3 exx.; 73—75, several exx.; 66—64, 1 ex. Zaire.

E. impala sp.n.

Length 5.5—6.5 mm. Like the preceding, but smaller. Penis (Fig. 62 e—f) slender, with a pair of long, spiral appendages like the horns of an impala antelope, stem ventrally membraneous.

Equatoria: Juba-Nimule, 1 ♂, type and 1 paratype, 10—11. III. 1963; 73—75, 1 paratype; 74, 1 paratype.

E. punctata Syn. — 78—79, 1 ex.; 77, numerous exx.; 62, 2 exx.; 66—67, several exx. Previously known from Zaire.

E. damon sp.n.

Length 6.5 mm. Like *E. punctata*, but

somewhat smaller and paler: median red band of frons not reaching the lower margin, upturned lateral margins of vertex with only 3 small, obscure brownish spots, pronotum and scutellum mainly yellowish brown and elytra paler, with base of costal margin with distinct transverse pale stripes. Penis (Fig. 62 a—b) stout, with two pairs of appendages: the first pair two-branched, one branch short and directed dorsad, the second long, at first directed ventrad and then strongly deflected apical along the ventral margin of penis, the common stem of the branches short; the second pair lying close to each other in the dorsal surface of penis, these appendages expanded subapically.

Blue Nile: Ingessana Mts., 1 ♂, type, 17—22. XI. 1962.

E. spinifer sp.n.

Length 7—8.2 mm. Like *E. damon*, but bigger, the upturned lateral margin of vertex with only two faint orangish spots and corium without a hyaline median spot. Penis (Fig. 62 c—d) narrower in lateral aspect, with two pairs of appendages: the first pair much as in *damon* (two-branched), the second much shorter and straight (in *damon* distinctly deflected dorsad in the apical part), falcate, without a conspicuous subapical expansion.

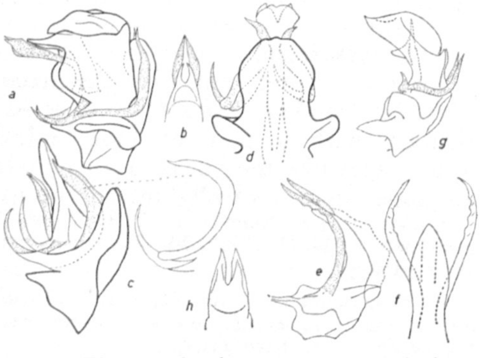

Fig. 62. *Elasmoscelis damon* sp.n.: a penis from side; b apex of same, ventral aspect. — *E. spinifer* sp.n.: c—d same. — *E. impala* sp.n.: e—f same. — *E. despecta* Mel.: g—h same.

South Yemen: Al Hussein, near Lahej, 1 ♂, type and a paratype, 29. XI. 1937, Scott and Britton, British Museum, paratype in my collection. Possibly a synonym of *E. iram* Kk. (Socotra) synonymized with *E. trimaculata* by Melichar 1915: 360.

E. despecta Mel.

This and the following species differ from the others in the completely pale lateral margins of the vertex. Penis as in Fig. 62 g—h.

74, 3 exx. Previously known from French Sudan.

E. saegeri Syn.

Length 6.5 mm. Like *E. despecta*, but much smaller, elytra with only the large transverse pale spot at middle of costal margin (apical margin only very slightly paler) and legs with ± distinct pale markings. Penis (Fig. 67 e) with two pairs of appendages: the basal pair strongly curvate, the second pair very long, extending far beyond apex of penis; also a single horn-shaped process present basally in the dorsal surface.

83, 1 ex.; 54, 3 exx.; 51, 1 ex. Zaire.

TROPIDUCHIDAE

TROPIDUCHUS St.

T. marpsias sp.n.

Length 9 mm. Yellowish, probably green in life. Apical cells of elytra with a transverse fuscous stripe along apical margin.

Vertex in middle line shorter than an eye, slightly shorter than pronotum, 4 × as broad as long, lateral margins distinctly curvate, apical margin arched; disk strongly concave owing to the elevation of the margins, a slight median keel present basally. Frons broadening somewhat ventrad, broadest below antennae, 1.53 × as long as broad, median keel sharp but not incrassate, lateral margins elevated; clypeus with a sharp

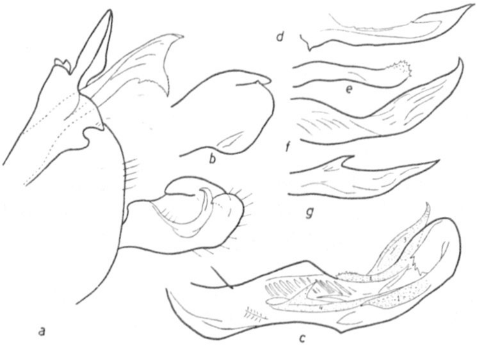

FIG. 63. *Tropiduchus marpsias* sp.n.: a anal tube, pygophore, stylus and penis from side; b right stylus. — *Numicia lotis* Fenn. (Yambio): c penis; d—g appendages Nos. 1, 2, 3 and 4 of same.

median keel. Elytra about 2.3 × as long as broad, venation about as in *T. iphis* Fenn. (the 1st sector bifurcate relatively near base, before the middle of elytra), costal margin with about 20 cross veins. Male genitalia as in Fig. 63 a—b. Penis with a dentate, sharply triangular subapical expansion. Styli fused to each other, asymmetrical.

Apparently related to *T. iphis* Fenn. (Zaire), known in the female sex only, but elytra considerably longer and provided with distinct fuscous marginal stripes in all apical cells. Genitalia distinctive.

Equatoria: Lotti forest, 1 ♂, type, 14—17. III. 1963.

NUMICIA St.

N. ghesquierei Lall. — 63—62, 1 ex.; 68, 1 ex.; 77, 1 ex.; 75, 1 ex.; 64—63, 1 ex.; 74, 1 ex.; 76—81, 1 ex.; 62, 1 ex. In moist localities, swamps, shores, forests etc. Zaire.

N. chiron Fenn. — 64—63, 1 ex. Zaire.

N. lotis Fenn.

Penis as in Fig. 63 c—g.

62, 1 ex. Previously known from Zaire.

N. orphana sp.n.

Length 5.5—7 mm. Like *N. lotis* Fenn. (also penis), but 1) smaller 2) uniformly yellowish green (only one specimen with traces of fuscous pattern in apical part of elytra), 3) vertex 0.7 × as long as broad at apex of posterior emargination (1.0 × or more in *lotis*), 4) frons 1.65 × as long as broad (2 × in *lotis*) and 5) elytra narrower, scarcely broadening apicad, about 3 × as long as broad (in *lotis* distinctly broadening apically, 2.5 × as long as broad).

Kassala: Erkowit, 1 ♂, type and some paratypes, 4—5. XII. 1962. On *Phoenix* sp.

N. talassio sp.n.

Length 5.5—6.5 mm. Like *N. lotis*, but 1) smaller, 2) vertex and median parts of pronotum and of scutellum without dark bands; fuscous pattern of elytra as in *lotis*, but hyaline area somewhat larger, 3) vertex 0.83 × as long as broad at apex of the posterior emargination, 4) frons 1.7 × as long as broad and 5) process No. 1 of penis (Fig. 64 a—c) much broader, blade-shaped and process No. 4 simple, falcate.

Equatoria: Yambio, 1 ♂, type and 1 ♀ paratype, 18—25. IV. 1963.

N. memnon Fenn. — 83, 4 exx.; 77, 2 exx.; 64—63, 1 ex.; 74, 3 exx.; 73—75, 1 ex.; 62, 2 exx.; 66—64, 2 exx. In moist localities. Previously known from Zaire.

N. gorgo sp.n.

Length 7.5—8.5 mm. Like *N. taenia* (F.), but differing in the absence of the apical appendage of penis (Fig. 64 d —e).

Vertex 1.24 × as long as broad at

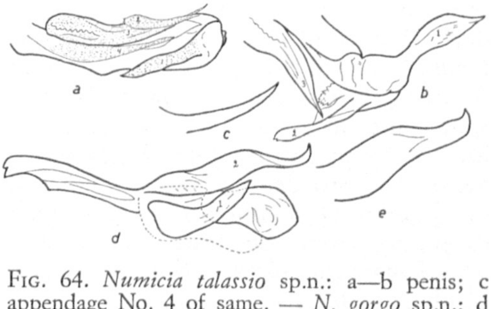

FIG. 64. *Numicia talassio* sp.n.: a—b penis; c appendage No. 4 of same. — *N. gorgo* sp.n.: d penis; e appendage No. 2 of same.

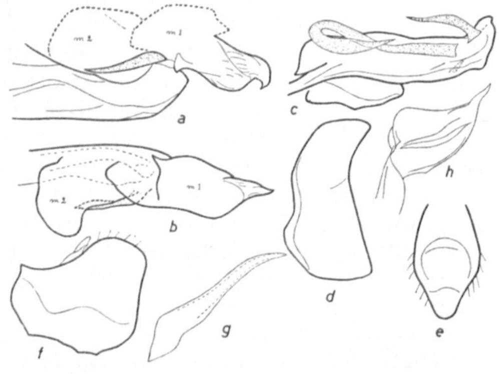

FIG. 65. *Numicia doleib* sp.n.: a—b penis (m_1 and m_2 = the membraneous lobes). — *Catulliaria ugandae* Muir: c penis. — *Ommatissus tumidus* sp.n.: d pygophore from side; e anal tube, dorsal aspect; f stylus; g stem, h basal lobe of penis.

apex of the posterior emargination. Frons 2 × as long as broad.

In *N. maenia* Fenn. appendage No. 2 of the penis is similarly shaped, but, according to the original figures (FENNAH 1957: 130), appendage No. 1 is bifurcate and dissimilarly shaped.

Equatoria: Yambio, 1 ♂, type and 2 ♀ paratypes, 18—25. IV. 1963.

N. doleib sp.n.

Length 5.5—7 mm. Pale green. Vertex with a fuscous stripe starting from apico-lateral corner and directed mediobasad on either side. Median area of pronotum with two round black basal spots. Scutellum with a roundish black spot on either side. In ♂ tegulae also dark. Pattern of elytra as in *N. canopus* Fenn., but in ♀ the apical fuscous figure ± strongly reduced to minor separate spots, the most distinct of which is located by pterostigma, the basal transverse band broadening mesad (♂♀) and not laterad as in *canopus*, in ♂ branch extending from the apical figure into apical part of clavus. Spines of legs black-tipped.

Body much as in *N. canopus*. Vertex 0.73—0.80 × as long as broad at apex of the posterior emargination. Frons 1.4 × as long as broad. Elytra rather parallel-sided, 3.2 × as long as broad. Penis (Fig. 65 a—b) with two large membraneous lobes.

Differing from *N. canopus* Fenn. in the blackish markings of the vertex and the thorax and in the shape of the penis.

51, 1 paratype; 61—52, 1 paratype; 30 km N of Terakeka, 1 ♂, type, 4—5. III. 1963. On doleib palm *(Borassus flabelliferus).*

CATULLIARIA Muir

C. ugandae Muir. Penis as in Fig. 65 c. — 78—79, 3 exx.; 66—67, several exx. Previously known from Uganda.

C. brevipennis Syn. — 62, several exx. Zaire.

OMMATISSUS Fb.

O. tumidulus sp.n.

Length 4.5 mm. Like *O. binotatus* Fb., but darker and the black spots on pronotum and frons larger. Frons distinctly tapering ventrad (rather parallel-sided in *binotatus*), with lateral margins more strongly upcurved and disk distinctly microsculptured. Elytra shorter. Stylus (Fig. 65 f) much broader. Stem of penis shorter, length 0.375 mm., the basal plate (Fig. 65 g—h) broad. Other genitalia as in Fig. 65 d—e.

Kassala, Erkowit, 1 ♂, type and many para-

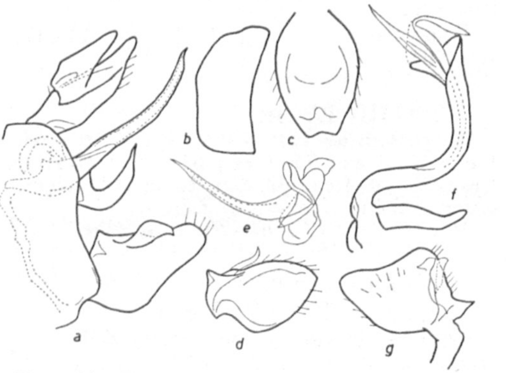

FIG. 66. *Ommatissus binotatus* Fb. (Iraq): a genital segment from side. — *O. alpinus* sp.n.: b pygophore from side; c anal tube, dorsal aspect; d stylus; e penis. — *Trypetimorpha canopus* sp.n.: g stylus; f penis.

types, 5—10. VII. 1961; 10, 1 paratype; 14, several paratypes. On *Phoenix* sp.

O. *binotatus* Fb (=*lybicus* Bgv.)

Male genitalia in Fig. 66 a. Stylus distinctly narrowing apicad. Stem of penis long, length 0.495 mm., basal plate thin, digitate.

Material studied: Iraq, Basrah, 1 ♂, 29. V. 1935, Dowson, British Museum. On date palm.

O. *alpinus* sp.n.

Length 4.5 mm. Usually macropterous. Mainly coffee-brown. Margins and keels of head and of thorax yellowish brown. Upper margin of frons and sides of pronotum with the large round black spots common in the genus, tip of scutellum pale. Elytra hyaline, faintly brownish, veins brown. Segmental margins of abdomen narrowly pale. Under surface blackish. Femora dark brown, other parts of legs yellowish brown.

Resembling O. *binotatus,* but narrower. Frons strongly tapering ventrad, 1.5 × as long as broad, median keel sharp. Vertex nearly 0.6 × as long as broad. Pronotum and scutellum with distinct keels. Elytra distinctly longer than abdomen in the brachypterous form, and much longer in the macropterous form. Male genitalia: Side lobes of pygophore (Fig. 66 b) roundedly truncate apically. Anal tube (Fig. 66 c) broadly ovate, apical margin slightly insinuated. Stylus (Fig. 66 d) ovate, with a falcate dorsal process. Penis (Fig. 66 e) with stem thin, sharp-tipped, basal plate small.

Easily recognized by the dark colouring etc.

Equatoria: near Gilo, alpine zone, 1 ♂, type, and several paratypes, 18—24. III. 1963.

TRYPETIMORPHA C.

T.*canopus* sp.n.

Length 3.5—4.5 mm. Yellow-brown. Frons with a broad, blackish transverse band in lower part and a faint brown median spot in upper half. Tip of clypeus dark. Genae with two black transverse spots. 1st and 2nd antennal joints with a black transverse stripe on anterior surface. Upturned lateral margins of vertex with a small dark spot. Pronotum laterally slightly darker. Sides of scutellum with golden tinge. Elytra hyaline, medially largely dark brown; veins mainly concolorous, in costal and apical margin dark brown, basally also narrowly bordered with the same colour. ♀ with a shiny black knob on either side of apex of abdomen. Legs with irregular fuscous spots and lines.

Resembling T. *pilosa* Hv. in general appearance, but more robust. Face and elytral veins with erect hairs. Clypeus with a triangular knob. Frons relatively parallel-sided, 1.36 × as long as broad, median keel sharp. Vertex pentagonal, 0.8 × as long as broad. Stylus and penis in fig. 66 f—g. Pygophore (♀) with a triangular dorsal hump on either side.

Differs from T. *pilosa* Hv. in the larger size, the frontal markings, the absence of large round milky spots in the dark central area of the elytra and in the only narrowly fuscous marginal veins of the elytra.

Blue Nile: Ingessana Mts., 1 ♀, type and 2 paratypes, 17—22. XI. 1963.

MANGANEUTES Fenn.

M. *agenor* Fenn. — 1, 1 ex.; 29. IX. 1962, Panelius; 15, 2 exx.; 17, 3 exx.; 19—18, 1 ex. In dry localities. Previously known from Somalia.

NOGODINIDAE

PHILBYELLA Ch.

P. *elba* sp.n.

Length 9—10 mm. Like P. *arabica* Ch., but much more robust. Vertex 2.82 × as broad as long medially, anterior margin distinctly angulate. Frons 1.56 × as long as greatest width. Costal

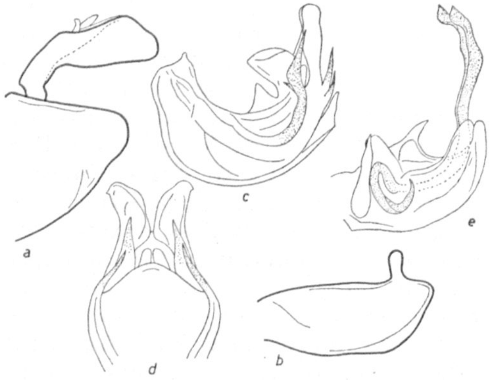

FIG. 67. *Philbyella elba* sp.n.: a pygophore and anal tube; b stylus; c penis from side; d apex of same, ventral aspect. — *Elasmoscelis saegeri* Syn.: e penis from side.

margin of elytra with about 10 dark spots.

Male genitalia: Side lobes of pygophore (Fig. 67 a) roundedly triangular. Anal tube (Fig. 67 a) distinctly broadening apicad in later aspect. Stylus in Fig. 67 b. Penis (Fig. 67 c—d) short and broad, strongly recurved dorsad, with two pairs of falcate processes in apical part, dorsal surface with an unpaired triangular subapical lobe.

P. arabica Ch. is much smaller and has a much narrower anal tube. *P. glarea* Dlab. (Iran) is dissimilarly coloured, has an anal tube with a still more expanded apical part and a differently shaped penis.

Kassala: Jebel Elba, 1 ♂, type and 2 ♀ paratypes, 10—14. XII. 1962. At lamp.

P. ailet sp.n.

Length 8.5 mm. Like the preceding, but slightly smaller. Vertex anteriorly more rounded. Male genitalia: Pygophore and anal tube as in the preceding species, but anal tube longer and somewhat narrower. Stylus as in fig. 68 a. Penis (Fig. 68 b—c) longer and narrower in lateral aspect, with two long basal lobes directed dorsad, apical part with 4 pairs of claw-like processes.

Eritrea, Ailet, 1 ♂, type, 30—31. V. 1963. Somalia, Daragodleh, 1 ♀ paratype, 25. VI. 1963. At lamp.

ISSIDAE

Recently revised by SYNAVE (1957 a: 1—78).

CALISCELIS Lp.

C. eximia St. — 19—18, 4 exx.; 72—74, 1 ex.; 74, 1 ex. Previously known from Ceylon and Turkestan.

C. berenice sp.n.

Length 3.5—4 mm. Shiny. Blackish. Frons and vertex with a very fine, indistinct pale median stripe. Margins of vertex and pronotum, and keels of scutellum very narrowly pale. Elytra yellow-brown, with a ± distinct, large shinier, squarish dark brown spot across corium; claval suture with a white, callose, longitudinal narrow stripe extending to near upper apical angle of elytra, this stripe narrowly bordered with blackish on either side; the pale areas of elytra less shiny. Dorsum of abdomen black, with an irregular yellowish brown median stripe in basal half, 1st visible tergite with a large triangular whitish yellow spot on either side; venter black,

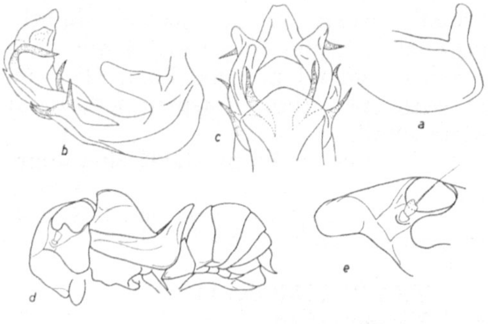

FIG. 68. *Philbyella ailet* sp.n.: a apex of stylus; b penis from side; c apex of same, ventral aspect. — *Myrmissus bellicosus* gen. et sp.n.: d. — *Afronaso rhinarius* Jac.: e head from side.

with a large yellowish white triangular basal spot; connexivum partly narrowly pale. Thorax pale ochraceous, propleurae mainly dark, metapleurae with a large shiny black spot. Legs dark, with minute pale irroration, middle and hind legs paler.

Gracile. Frons 1.36 × as long (total length as broad, nearly parallel-sided, its upper part between eyes flat, laterally concave, shagreened, with two distinct median keels diverging ventrad, upper margin concave; lower part of frons strongly convex, shiny, with very fine transverse wrinkles, not shagreened, keels obsolete. Clypeus shiny, convex, ventrally with a median keel. Vertex 1.54 × as broad as long, concave, apical margin roundedly produced. Pronotum with a faint median keel. Lateral keels of scutellum distinct. Elytra coriaceous, 1.5 × as long as broad, apex obliquely truncate; a distinct median concavity in upper part of elytra giving their profile a relatively pronounced saddle-shaped appearance (less pronounced than in *C. wallengreni* St.). Abdomen "ant-shaped", strongly constricted basally, apically strongly convex but narrow. Fore femora and tibiae strongly lamellate; femora triangularly expanded apicad, 2.42 × as long as greatest width; tibiae elongately ovate in outline, 2.1 × as long as broad. Middle and hind legs long and gracile.

Easily distinguished by the colouring, the gracile, "ant-shaped" abdomen, and the structure of the head.

55, 2 ♂, paratypes; Nimule, 1 ♂, type, 11—13. III. 1963.

ASARCOPUS Hv.

A. palmarum Hv. — 17, 1 ex. On date palms. Eremian (Egypt, Arabia).

AFRONASO Jac.

A. rhinarius Jac. — 77, 4 exx.; 60—70, 1 ex. Zaire (Albert Park), E. Africa (Meru).

MYRMISSUS gen.n.

Peculiar, somewhat ant-shaped species. Head relatively large. Vertex sloping apicad, shallowly concave, nearly as long as broad, apical margin rounded and feebly carinate. Face tumid, anterior margin in profile bluntly angular; frons obliquely sloping, moderately convex, slightly longer than broad, lateral margins regularly curvate, disk finely rugose, ecarinate; clypeus sharply conical, medially carinate, basally only faintly separated from frons. Pronotum short, laterally completely concealed by eyes, medially carinate, shallowly concave, with lateral margins elevated. Scutellum globosely humped, basally carinate in middle, apically and laterally broadly concealed by elytra. Elytra short, covering only base of abdomen, strongly saddle-shaped in profile, medially strongly concave, medio-apically produced dorsad in a long beak. Abdomen basally strongly constricted, apically expanded as in ant. Rostrum extending to middle coxae. Legs long and gracile, hind tibiae with one lateral tooth, 5 apical teeth, 1st and 2nd hind tarsal joint with two apical spines.

Type: *M. bellicosus* Lv.

Afronaso Jac. is a closely related genus differing in the long, subhorizontal proboscis (formed by frons and clypeus) of the head (Fig. 68 e), the flat and ecarinate pronotum, the flat median part of the scutellum, the flattish elytra, the basally not constricted abdomen and the shorter and thicker legs.

M. bellicosus sp.n.

Fig. 68 d. Length 2.8 mm. Shiny black. Genae and antennae dark brown. Elytra with an ivory stripe along claval suture, clavus shiny black, other parts of elytra brown. Base of abdomen with an ivory spot on either side. Under surface of thorax medially broadly yellow-brown. Venter basally whitish yellow. Legs yellowish brown, anterior

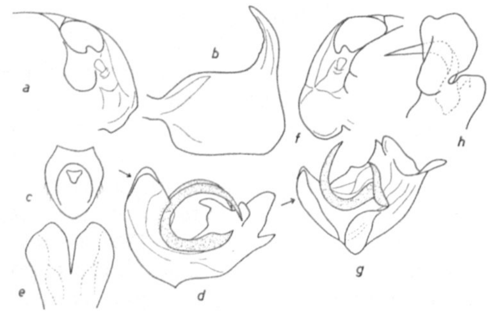

FIG.69. *Issopulex chloe* sp.n.: a head from side; b stylus; c anal tube, broad aspect; d penis from side; e apex of same from the direction indicated with arrow. — *I. nasutus* sp.n.: f head from side; g penis, lateral aspect; h same from the direction indicated with arrow.

tibiae darker with whitish apex, tarsi apically dark.

Brachypterous. Vertex nearly as long as broad, slightly sloping apicad. Upper margin of frons concave, lateral margins curvate.

Equatoria: Opari-Magwe, 1 ♂, type, 13. III. 1963.

ISSOPULEX Ch. & Fenn.

The genus was recently described by CHINA & FENNAH (1960:134—137) from the Iles Glorieuses in the Indian Ocean.

I. chloe sp.n.

Length ♂ 2 mm., ♀ 2.25 mm. ♂ shiny black. Frons, except laterally, vertex, pronotum and median parts of scutellum, yellowish brown. Sometimes also commissural margin of clavus narrowly pale. Legs yellow-brown, hind femora ± infuscate. ♀. The pale areas of upper surface more greyish, ± densely rugose and darkly punctate. Abdomen with a pale median stripe on dorsum. Legs dark brown.

Small, ovoid, convex. ♂ finely punctate. Vertex about twice as broad as long, with a roundish shallow depression on either side, anterior keel and lateral margins not raised. Frons (Fig. 69 a) strongly sloping, roundedly curvate in profile, ecarinate, lateral margins distinctly curvate; clypeus medially keeled, triangular. Pronotum short, ecarinate, laterally completely overlapped by eyes. Scutellum with two round pits. Elytra squarish, as long as broad, coriaceous, rugosely punctate, venation obscure. Dorsum shagreened, but only very finely and sparsely punctate. Hind tibiae with one lateral spine. ♀ more robust. More coarsely punctate and rugose. Frons depressed. Elytra broader than long. Male genitalia in Fig. 69 b—e, aedeagal appendages subequal in length.

Kordofan, Dilling- Kadugli, 1 ♂, type and 1 ♂ paratype, 1—2. II. 1963. 85—84, 1 ♀ paratype; 72—74, 1 ♂ paratype. At lamp in sandy and gravelly places. Apparently living on ground among fallen leaves, etc.

I. nasutus sp.n.

Length 2.2 mm. Shiny black. Face and vertex tinged with brown. Abdomen, under surface and legs yellow-brown. Femora with brown spotting.

More cylindrical. Face (Fig. 69 f) longer, its anterior margin nearly straight in profile, with faint puncturing. Frons tapering ventrad, with traces of 3 keels, the lateral ones rather distinct in upper margin. Clypeus sharply produced, distinctly carinate. Pronotum medially carinate. Pronotum, scutellum and elytra shagreened. Scutellum with only faint roundish depressions. Elytra squarish, longer than broad. Dorsum rugose, finely dotted with brown. Male genitalia much as in the preceding species, but one of the aedeagal appendages (Fig. 69 g—h) much shorter than the other.

Equatoria: Yei-Iwatoka, 1 ♂, type, 12—13. IV. 1963.

GWURRA gen. n.

Sexually dimorphic and pterygodimorphic species resembling the genus *Ommatidiotus* Spin. Body elongate, parallel-sided. Vertex (Fig. 70 a) longer than broad, basally parallel-sided, apically ± strongly triangularly produced, flat or slightly concave, shagreened, margins sharp but not upcurved, a blunt median keel present. Eyes long, extending caudally to near basal margin of pronotum. Face long, nearly parallel-sided; frons not separated from clypeus by a distinct furrow, with 3 blunt carinae, the lateral ones sometimes evanescent, the median keel continuing on to clypeus. Pronotum short, median lobe flat, shagreened, nearly quadrangular, with 3 keels, the lateral ones slightly diverging caudad. Scutellum with 3 keels, shagreened. Elytra usually reduced, squarish, coriaceous, with indistinct venation and covering only base of abdomen; in the macropterus form longer than abdomen, hyaline, venation as in Fig. 70 f. Abdomen dorsally convex. Genital segment small. Hind tibiae with 1 lateral spine, legs otherwise as in *Ommatidiotus.*

Type: *G. aphrodite* Lv.

Differs from *Ommatidiotus* in the much smaller size, the more strongly marked sexual dimorphism, the shape of the head, the tendency for a stronger reduction of the elytra, the venation of the elytra and the genitalia.

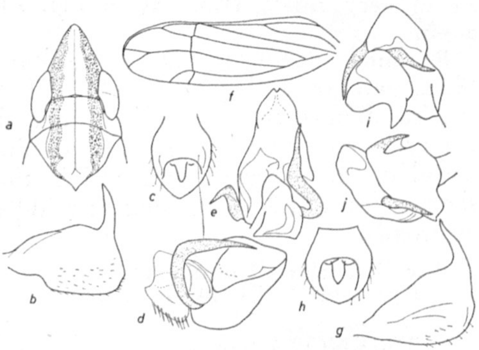

FIG. 70. *Gwurra aphrodite* gen. et sp.n.: a head and thorax (♀); b stylus; c anal tube, broad aspect; d—e penis. — *G. astarte* sp.n.: f elytron (f. macr.). — *G. sappho* sp.n.: g stylus; h anal tube, broad aspect; i—j penis.

G. aphrodite sp.n.

Fig. 70 a. Length ♂ 2.2 mm., ♀ 4 mm. Golden or yellow-brown, ♂ shiny, ♀ rather opaque. 2 bright red longitudinal stripes from apex of head to tip of abdomen, and abdomen with a red lateral band on either side. In ♂ these bands are less distinct, but the apical part of the abdomen has a median black band. Sides of abdomen tinged with red. Legs yellowish, femora with a round black apical spot on under surface.

♂ very small. Vertex 1.3 × as long as broad, concave, apex rather bluntly angular. Frons (as also in ♀) strongly convex, median keel not elevated, lateral keels evanescent. Elytra quadrangular, relatively hyaline, extending beyond middle of abdomen, with 3 more distinct longitudinal veins. ♀ with vertex 1.55 × as long as broad, strongly produced apically. Elytra squarish, covering only base of abdomen, coriaceous, rugose, with 3 more distinct longitudinal veins. Male genitalia in Fig. 70 b—e.

56, 1 paratype; near Gwurra, 1 ♂, type, and several paratypes; 54, 1 paratype. In swampy meadows.

G. astarte sp.n.

♀ f.brach. 4—4.5 mm., f.macr. 4.5—5.2 mm. Resembling the preceding but 1) considerably darker: general colour darker brown; the red bands of upper surface less distinct, especially in abdomen evanescent; margins and keels of head and of thorax whitish; abdomen with fine dark dotting; under surface mainly blackish brown; keels of frons and of clypeus pale; venter sometimes medially pale; legs dark brown, (f.brach.) or yellowish brown, with a relatively large black apical spot on under surface (f.macr.) and 2) frons with 3 distinct keels.

Vertex 1.33—1.43 × as long as

broad. Elytra of the brachypterous form as in the preceding species, those of the macropterous form longer than abdomen (Fig. 70 f).

72—74, 1 ♀ paratype; Loka forest, 1 ♀ type and 2 ♀ paratypes, 8—10. IV. 1963; 66—67, 1 ♀ paratype. In swampy meadows, once also found in a field.

G. sappho sp.n.

F. brach. ♂ 2.2 mm., ♀ 3.5—4 mm. ♂ upper surface blackish, with a broad whitish yellow median band completely occupying vertex and extending caudad to tip of abdomen. Face blackish, apex of clypeus pale. Under surface otherwise pale ochraceous. Legs pale ochraceous, femora with 2 oblique transverse black apical stripes on under surface. ♀ Dirty yellowish brown, with dark spotting and irroration. Dorsum of abdomen with 3 pale longitudinal bands with sparse irroration, the median one with a narrow brown longitudinal stripe. Keels of face pale. Venter medially pale, unmarked. Legs as in ♂.

Vertex relatively bluntly produced in both sexes, in ♂ 1.6 ×, in ♀ 1.33 × as long as broad. Frons with 3 keels, the lateral ones weakly developed. Elytra of ♂ quadrangular, extending to middle of abdomen, blackish, medially pale; those of ♀ squarish, covering only base of abdomen, dotted with brown. Male genitalia as in Fig. 70 g—j.

53, 4 paratypes,; R. Malmul-Tonj, 1 ♂, type, and several paratypes, 21—22. II. 1963; 60—70, 2 paratypes. Moreover one macropterous female from 26 may also belong to this species. From various meadows.

DURIUM St.

D. scylax sp.n.

Length 3.5—4.2 mm. Uniformly yellow-brown, rather opaque. Elytra with a few very indistinct brownish spots along veins.

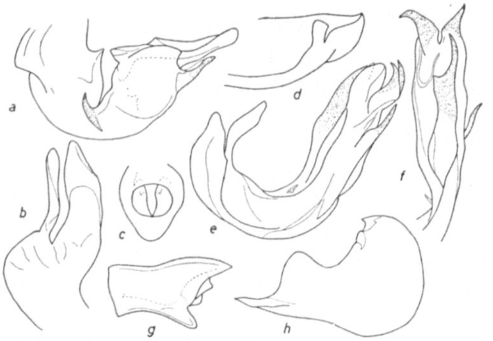

FIG. 71. *Durium scylax* sp.n.: a penis from side; b same; ventral aspect; c anal tube, broad aspect; d apex of stylus, dorsal aspect. — *Trienopa dionaea* sp.n.: e penis from side; f same, ventral aspect; g anal tube from side; h stylus.

Seen from above, anterior margin of head rounded, crown of uniform length, 1.62—1.75 × as broad as long; vertex anteriorly with blunt rounded angles, delimited by carinae, about twice as broad as long, median carina basally distinct, apically evanescent. Frons 1.5 × as long at middle as broad, lateral margins shallowly curvate, 3 distinct median carinae, the central one extending on to clypeus. Pronotum with a median carina and two small round pits. Scutellum tricarinate. Elytra longer than abdomen, about twice as long as broad, veins elevated. Hind tibiae with 3 distinct lateral spines. Male genitalia: Styli (Fig. 71 d) fused, their general shape as in *D. tschakomensis* Syn. Anal tube (Fig. 71 c) very small. Penis as in Fig. 71 a—b.

Running down to *D. senegalense* (Sgn.) in SYNAVE's key (1957 a:20). That species differs in the darker general colouring, the two brown spots in the costal margin of the elytra and in the shorter frons (1.2 × as long at middle as broad).

Blue Nile: Singa- Damazin, 1 ♂, type and several paratypes (♂♀), 14—17. XI. 1962.

TRIENOPA Sgn.

T. dionaea sp.n.

Length 4.2 mm. Yellow-brown. Upper lateral corners of frons dark. Head and thorax with a greenish tinge. Elytra dark yellowish brown, extreme costal margin reddish.

Vertex concave, 0.82 × as long as broad, lateral margins roundedly converging apicad in basal half, parallel in apical one, apical margin nearly straight. Frons broadening only slightly ventrad, nearly parallel-sided, 3.1 × as long as broad, lateral margins distinctly upcurved, median keels distinct. Clypeus tumid, median carina rather faint. Pronotum medially concave, carinae elevated, median lobe parabolic. Lateral keels of scutellum very faint, median keel absent. Elytra with a strong mediobasal hump; costal membrane remarkably broad, nearly as broad as clavus, with numerous transverse veins; claval veins not united until in the apical third, apex of clavus distinctly produced; veins of elytra less raised, its surface rugose. Hind tibiae with two lateral spines situated in the apical third. Male genitalia as in Fig. 71 e—h. Styli fused.

Resembling *T. paradoxa* (Gst.) in the broad costal membrane, but differing in the smaller size, the broader median lobe of the pronotum and the dissimilarly shaped penis. A revision of the genus in SYNAVE 1957 a:38—43.

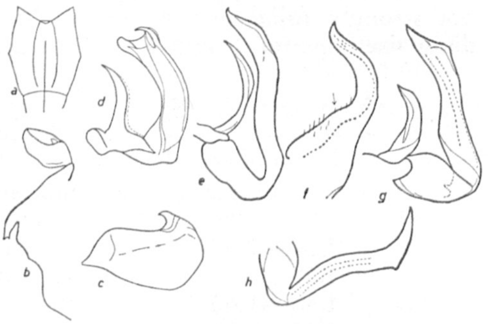

FIG. 72. *Adenissus brachypterus* gen. et sp.n.: a frons; b pygophore and anal tube from side; c stylus; d penis, lateral aspect. — *Hilda undata* (Wk.): e penis from side; f fused styli in lateral aspect. — *H. patruelis* (St.) (Singa-Damazin): g penis, lateral aspect; h same of a small specimen from Lotti forest.

Equatoria: Kapoeta-Boma, 1 ♂, type, 26—27. III. 1963.

HYSTEROPTERUM A.—S.

H. katonae Mel. — Numerous exx. from 78—79 and 79. In undergrowth of the *Podocarpus* zone and in mountain meadows. E. Africa (Kilimandjaro area), Zaire.

H. melichari Schmidt ssp. *viduum* Lv. — 26, several exx. Endemic.

H. melichari Schmidt ssp. *kivuense* Syn. — Many exx. from 79; 78—79; 77 and 66—67. In humid forestbiotopes. E. Africa (Kivu), S. W. Ethiopia.

H. concaviceps Lv. — 17, several exx. From scanty herbaceous mountain vegetation in dry localities. Endemic. The taxonomy and distribution of the African *Hysteropterum* species has already been treated by me (LINNAVUORI 1970).

ADENISSUS gen.n.

Body robust and dorso-ventrally depressed. Vertex strongly concave, anterior margin truncate. Frons broadening slightly to the lower angles of eyes, then tapering considerably ventrad, so that lateral margins form a blunt angle, upper lateral angles sharp; median keel absent in upper third, otherwise sharp and extending on to clypeus; lateral keels sharp and nearly parallel, lying closer to the median keel than to the lateral margins (Fig. 72 a), not uniting in the strongly concave upper margin. Disk of pronotum concave, hind margin straight. Scutellum with a median ridge and two short lateral ones. Elytra short, squarish, tectiform, extending only to 4th tergite, venation reticulate. Flying wings reduced. Hind tibiae with one lateral spine. Genital segment (♂) remarkably small. Penis with an unpaired dorso-basal horn.

Type: *A. brachypterus* Lv.

A. brachypterus sp.n.

Length 4.5 mm. Fig. 16 f. Brownish grey. Frons very densely irrorated with black, save above the clypeal suture. Vertex with black lateral margins and with an irregular X-shaped brownish median figure. Pronotum with some dark spots. Scutellum with dark brown irroration. Elytra blackish, scutellar and commissural margin of clavus and a large ovate area in base of corium pale greyish brown, each elytron thus presenting a roughly semicircular blackish figure. Under surface uniformly pale greyish. Dorsum of abdomen with dark spots and irroration. Legs with fuscous rings and other markings.

Vertex twice as broad as long. Frons 1.44 × as long as broad. Male genitalia as in Fig. 72 b—d.

South Yemen, Lahej- Dhala road, 1 ♂, type and 1 ♂, paratype, 9—15. VII. 1963.

TETTIGOMETRIDAE

Hildinae

HILDA Kk.

1. *H. undata* group:

Crown strongly produced. Face strongly concave in profile.

H. undata (Wk.)

Crown 1.11 × as broad (measured at medio-basal angles of eyes) as long, 1.7 × as long as pronotum. Male genitalia: Stem of penis (Fig. 72 e) long and rather slender, the dorsal process long, falcate in lateral aspect. The fused styli (Fig. 72 f) without a special lobe at the point indicated with an arrow.

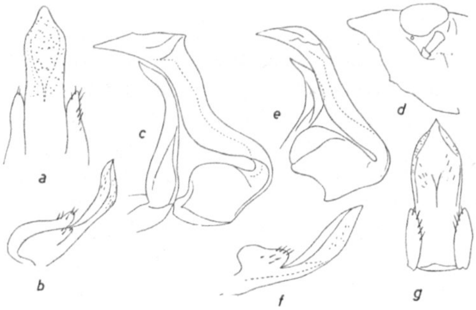

FIG. 73. *Hilda patruelis* (St.): a fused styli, ventral aspect; b same from side. — *H. minerva* sp.n.: c penis, lateral aspect. — *H. speciosa* Hesse: d head in profile; e penis, lateral aspect; g fused styli, ventral aspect; f same, lateral aspect.

62, 1 ex. W. Africa, Zaire

H. rubrospersa Fenn.

Easily recognized by the large size. Decription in FENNAH 1957:117—119.

51, 2 exx.; 68, 1 ex.; 61—52, 1 ex. Previously known from Zaire.

2. *H. patruelis* group:

Crown less produced, although distinctly longer medially than next to eyes, 1.20—1.44 × as broad as long, 1.3—1.6 × as long as pronotum. Face less concave, with upper margin of head not strongly foliaceous in profile. Medium-sized species, length 4.2—5.5 mm.

Table 1. The variability in the shape of vertex of *Hilda patruelis* (St.)

Locality	Ratio of breadth to length of crown	Ratio of length of crown to length of pronotum
Rustenburg (S. Africa)	1.30—1.43	1.30—1.52
Uganda (1 ex.)	1.33	1.36
Lotti and Kateri	1.42—1.44	1.46—1.60
Nimule and Juba	1.20—1.25	1.50—1.60
Kapoeta — Boma	1.24—1.29	1.48—1.50
Singa — Damazin	1.24—1.26	1.46—1.48
Asmara — Decamere (Eritrea)	1.30—1.33	1.44—1.60
Harrar (Ethiopia, 1 ex.)	1.25	1.50

H. patruelis (St.)

A very variable species in the size, the colouring and the shape of the head. The elytra can be olivaceous or reddish brown, with ± distinct pale bands as in *undata*, or, like the rest of the upper surface, greyish brown, with fuscous dotting and only poorly developed pale bands. The darkest specimens are strongly irrorate with blackish brown. The face always with a well-delimited black transverse band. The variability in the shape of the vertex is seen in table 1.

The populations from South Africa, Uganda and the Lotti area in the Sudan are relatively short-headed, moreover the Lotti population is noticeably smaller in size. Separate races might possibly be distinguished in this species, if larger series of specimens were studied from differents parts of Africa. FENNAH 1957: 117) has regarded *H. elegantula* (Gst.) as a race of *patruelis*. *H. paolii* Lall. (Somalia) and *H. welwitschii* Dist. (S. Africa) may possibly also be races of this species. Male genitalia as in Figs. 72 g—h, 73 a—b.

22—25, 1 ex.; 23, 1 ex.; 38—37, 1 ex.; 51, 2 exx.; 72, 2 exx.; 78—79, 2 exx.; 81—82, 2 exx.; 77, several exx.; 74, 1 ex.; 71—81, 1 ex. Widely distributed in Africa (S. and E. Africa, Zaire, Ethiopia, S. W. Arabia).

H. minerva sp.n.

Length 5—5.5 mm. Like *H. patruelis*, but more robust, less elongate and paler.

Colouring: Remarkably pale. Pale yellow-brown. Face usually with only a faint trace of the dark transverse band. Crown, pronotum and often also median parts of scutellum yellowish, immaculate, save for a row of dark spots along anterior margin of crown. Scutellum laterally dark brown. Elytra lighter or darker brown, with a well-developed whitish or greenish pattern of *patruelis* type, costal margin with 3 ± large, pale or green spots, moreover apical part of clavus and the adjacent inner angle of corium ± pale or greenish; veins and apex sometimes with a reddish tinge. Under surface and legs pale yellowish, tibiae with distinct black spots.

Crown broadly spatulate, 1.28—1.50 × as broad as long, 1.23—1.48 × as long as pronotum. General shape of head as in *patruelis*. Male genitalia as in *patruelis*, but stem of penis (Fig. 73 c) relatively short, much thicker and strongly deflected, the dorsal process longer and sharper.

6, 2 paratypes; 21, Umm Barona, 1 paratype; Kordofan, Umm Shuheita-Jebel Shivai, 1 ♂, type, 6—7. II. 1963. In dry, sandy localities on shrubs and bushes *(Acacia, Quassia italica)*.

3. *H. speciosa* group:

Small species. Crown often remarkably short, only slightly longer at middle than next to eyes.

H. speciosa Hesse

Length 3.5—3.7 mm. A small dark species, with a well-developed whitish pattern on elytra. Vertex short, only roundedly produced, 1.35 × as long at middle as next to eyes, 1.44 × as broad as long, 1.6 × as long as pronotum. Face (Fig. 73 d) rather shallowly concave, with lower part relatively convex in profile. Male genitalia: Stem of penis (Fig. 73 e) rather gracile. The central prolongation of the fused styli (Fig. 73 f—g) broad, but sharp-tipped.

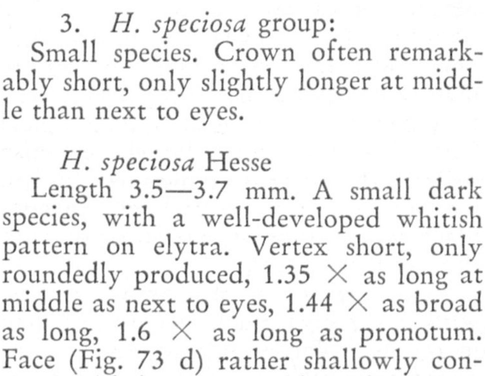

FIG. 74. *Hilda ceres* sp.n.: a head in profile; b penis from side; c fused styli, ventral aspect. — *H. diana* sp.n.: d head in profile; e anterior pale band of elytron; f fused styli, ventral aspect; g same, lateral aspect; h penis from side.

Material studied: S. Africa, Natal, Umtentweni, 1 ♂, Capener, in my collection.

H. ceres sp.n.

Length 4 mm. Resembling *H. speciosa*, but paler: Yellowish brown with a greenish tinge. Face with a broad white transverse band, but the dark band narrow and poorly delimited or nearly absent (broad and distinct in *speciosa)*, upper part of face with fine reddish dotting. Crown, pronotum and scutellum pale, the first-named sometimes with fine reddish dotting and with dark marginal spots. Basal angles of scutellum black. Elytra with a distinct *undata* pattern: clavus greenish yellow, with only the basal fourth blackish; corium mainly dark fuscous, with the pale pattern mentioned before, area along apical half of claval suture largely greenish yellow, the fuscous colour also broken by lighter areas elsewhere. Femora blackish, legs otherwise pale, tibiae with distinct black spots.

Face (Fig. 74 a) shallowly concave, with lower part much less convex than in *speciosa*. Vertex only roundedly produced as in *speciosa*, 1.35 × as long at middle as next to eyes, 1.4 × as broad as long, 1.35 × as long as pronotum. Male genitalia characteristic: Penis (Fig. 74 b) with stem unusually long and slender, dorsal process falcate. The central prolongation of the fused styli (Fig. 74 c) also very long and narrow.

25, 1 ♂ paratype; Upper Nile; Renk-Malakal, 1 ♂, type, 3—5. I. 1963.

H. diana sp.n.

Length 4 mm. Like *H. speciosa* in colouring, but more opaque and the general colouring of the upper surface darker fuscous (crown and thorax with dense pale irroration). Pattern of elytra mainly as in *speciosa*, but the anterior whitish yellow band (Fig. 74 e) very broad.

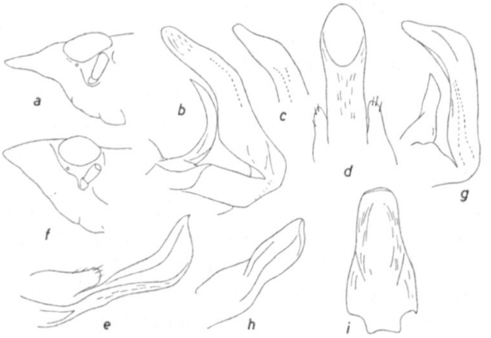

Fig. 75. *Hilda aurora* sp.n.: a head in profile; b penis from side; c apex of same (another specimen); d fused styli, ventral aspect; e same from side. — *H. juno* sp.n.: f head in profile; g penis, lateral aspect; h fused styli, lateral aspect; i same, ventral aspect.

Face (Fig. 74 d) as in *speciosa*, but upper part more strongly concave. Crown bluntly roundedly angularly produced as in the short-headed form of *patruelis*, strongly concave, 1.5 × as long at middle as next to eyes. 1.37 × as broad as long, 1.36 × as long as pronotum. Male genitalia: Penis (Fig. 74 h) with stem thick, dorsal surface with a small basal triangular expansion in lateral aspect, dorsal process long and falcate. The central prolongation of the fused styli (Fig. 74 f—g) very broad, apex rounded.

Much smaller than the species of the *patruelis* group. *H. pulchra* (Carl.) (Ethiopia) unknown to me, differs in the colouring (the crown and the pronotum are sulphur-yellow, the pattern of the elytra different, the legs yellow).

Ethiopia, Machi, 1 ♂, type, 9. VI. 1963.

H. aurora sp.n.

Length 3.75—4 mm. Bright green, rather opaque. Clypeus and antennae dark brown, sometimes the former reddish and the latter green. Frons with a whitish transverse band above clypeus, above this faintly orangish, upper part pale. Sometimes a blackish transverse band present on frons. Costal margin sometimes with dark dots. Legs dark brown, reddish or yellowish, tarsi pale. Variability: Colouring constant. Only one specimen (Ed Daein) dark brown, with minute pale irroration in elytra, but without any traces of the *undata* pattern.

Face (Fig. 75 a) strongly concave, upper margin of head foliaceous, horizontal in profile. Crown only roundedly produced, 1.67 × as long at middle as next to eyes, 1.4 × as broad as long, 1.67—1.7 × as long as pronotum. Male genitalia: Penis (Fig. 75 b—c) with stem rather thick, dorsal margin with a rounded basal expansion, dorsal process falcate. The central prolongation of the fused styli (Fig. 75 d—e) broad and apically rounded in ventral aspect, blade-shaped in profile.

11, 1 paratype, 21. I. 1929, Efflatoun; Blue Nile, Wad Medani, Umm Barona, 1 ♀, type, and several paratypes, 26—28. VI. 1961; 36—40, 1 paratype; 45, 1 paratype; 44, several paratypes. South Yemen: Lahej-Dhala road, 1 paratype, 13—14. VII. 1963. On various shrubs and bushes *(Guiera senegalensis, Quassia italica, Balanites aegyptiaca* etc.) in dry, sandy localities.

H. juno sp.n.

Length 3.75 mm. Rather opaque. Yellowish brown. Face with a broad white and a broad brown transverse fascia, upper margin minutely dotted with brown. Crown and thorax tinged with golden brown and with fine dark brown irroration. Tip of scutellum and elytra yellowish green; costal margin with small fuscous spot in inner apical angle of corium. Under surface yellowish. Legs pale ochraceous, with dark irroration.

A small species, resembling the preceding, but face (Fig. 75 j) only slightly concave in profile. Vertex considerably shorter, 1.37 × as long at middle as next to eyes, 1.6 × as broad as long, 1.3 × as long as pronotum. Male genitalia characteristic: Penis (Fig. 75 g) with stem short and robust, dorsal process short. Styli entirely fused (Fig. 75 h—i), forming a broad, spatulate plate, without separate basal lobes.

Ethiopia, Machi, 1 ♂, type, 9. VI. 1963.

RICANIIDAE

POCHAZIA A.—S.

P. fasciata (F.) — 77, 1 ex. Palaeotropical (tropical Africa, India, Indonesia).

POCHAZOIDES Sgn.

P. schoutedeni Schm. — 17, 1 ex. Previously known from Eritrea.

RICANIA Gm.

R. hedenborgi St. — Sudan (METCALF 1955: 63). Pontomediterranean.

R. quinquefasciata St. — 26, several exx.; 39, 2 exx., Wilson, Mus. Oxford. Palaeotropical (tropical Africa, the Oriental region, China).

R. fuscula Mel. — 77, 2 exx. W. Africa (Cameroon, Nigeria etc.), Zaire.

R. atra Lall. — 66—67, 1 ex. Previously known from Zaire.

PRIVESA St.

P. pusilla sp.n.

Length 7—8.5 mm. Ochraceous. Upper margin of frons dark brown. Crown and pronotum with irregular dark markings, the most distinct of which form two faint longitudinal median bands. Base of scutellum blackish with 3 branches extending apicad. Elytra with irregular dark fuscous vermiculate stripes, especially apical area darkened, costal margin with 3 dark brown areas. Abdomen partly embrowned. Legs pale.

Small. Frons 0.75 × as long as broad, lateral margins curved, disk with 3 keels, the lateral ones starting from the upper margin between the median keel and the lateral margins, slightly nearer to the latter than to the former. Clypeus flattish, with a faint median keel and faint oblique transverse stripes. Crown very short and broad, apical margin slightly curved. Pronotum with a median carina. Scutellum with 3 keels. Elytra 2.3 × as long as broad, venation of the common type. Hind tibiae with

2 lateral spines. Male genitalia as in Fig. 81 c—e.

Easily recognized by the small size.

South Yemen: Jebel Jihaf, 1 ♀, type, British Museum, 1 ♂, paratype, my collection, IX. 1937, Scott and Britton.

FLATIDAE

Recently studied by SYNAVE (1955) and FENNAH (1957).

FLATINA Mel.

F. liciata Mel.

In the Sudanese specimens the oblique transverse red bands of the elytra are very reduced (only two of them are more distinct) and the whitish spots absent.

77, 2 exx. W. Africa, Zaire

F. rubrotincta (Hgl.)

In the studied specimen the red spots of the elytra are nearly totally absent.

66—67, 1 ex. W. Africa Zaire.

GYARINA Mel.

G. nigritarsis (Karsch) — 78—79, 1 ex. E. Africa, Zaire.

GYARIA St.

G. limbipunctata (Karsch) — 25, 1 ex.; 26, 2 exx.; 39, 1 ex., Wilson, Mus. Oxford; 38—37, 1 ex. Previously known from Zaire.

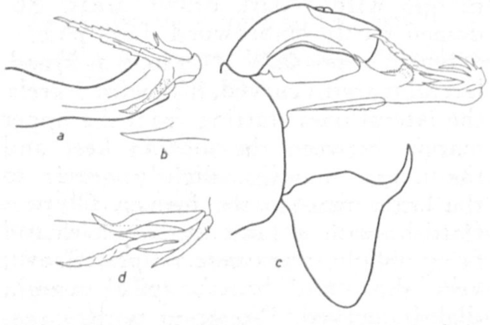

FIG.76. *Paranotus deiopeia* sp.n.: a penis from side; b lower aedeagal appendage of another specimen. — *Cryptoflata paphia* sp.n.: c apex of abdomen from side.

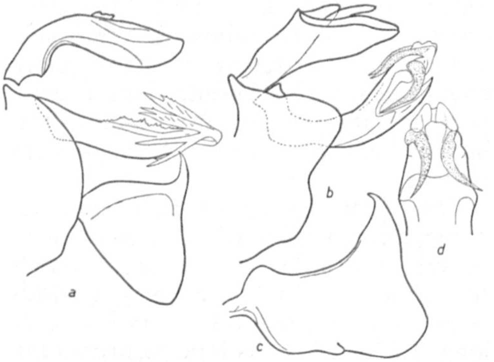

FIG. 77. *Cryptoflata paphia* sp.n.: a apex of abdomen from side. — *Phantia pinax* (Fenn.): b—c same; d apex of penis, ventral aspect.

G. longispina Syn. — 52, 1 ex.; 73—75, 1 ex. Zaire.

PARANOTUS Karsch

P. rufilinea (Wk.) — 72—74, 1 ex.; 70, several exx.; 77, 3 exx. W. Africa, Zaire, E. Africa.

P. deiopeia sp.n.

Length 6.5—8 mm. Like *P. rufilinea*, but 1) frons somewhat shorter, less shiny, medially carinate only in the upper two-thirds, 2) pronotum and scutellum nearly ecarinate, the latter also shorter, 3) apical margin of elytra more distinctly bordered with brown and 4) penis (Fig. 76 a—b) dissimilar, provided with two bifurcate appendages, the upper branch of which is dentate and much longer than the lower branch. Other genitalia as in *rufilinea*.

Upper Nile, Malakal, 1 ♂, type, 5—20. I. 1963; 38—37, 1 paratype; 53, 1 paratype; 46—45, 1 paratype.

CRYPTOFLATA Mel.

C. soaemis Fenn. — 52, 4 exx. Previously known from Zaire.

C. paphia sp.n.

Length 11—13 mm. A small species resembling *C. soaemis* in general appearance, but with apical two-thirds of commissural margin of clavus darkened. Frons only somewhat longer at middle than broad (39:37), lateral margins distinctly curvate and only slightly upcurved; disk convex, with a less distinct median carina. Male genitalia as in Fig. 76 c. Caudal margin of side lobes of pygophore rounded. Anal tube strongly curvate in lateral aspect. Penis with 5 apical appendages on either side, the longest one spiral, and with two claw-shaped processes in the middle of the dorsal surface and a paired, setigerous longitudinal lamella in front of them, ventral surface scored and provided with a minutely dentate median keel.

Blue Nile, Umm Banein, 1 ♂, type, and 2 paratypes, 14. XI. 1962; 21, 1 paratype; 85—84, 1 paratype; 44, 1 paratype.

C. hera sp.n.

Length 10.5—12.5 mm. A small, green species resembling the preceding, but costal and apical margins of elytra uniformly green. Commissural margin of clavus only slightly infumed.

Frons distinctly longer at middle than broad (36:30), broadest below antennae, lateral margins in the upper part straight, diverging ventrad, then, below antennae, roundedly curvate mesad, distinctly upcurved; disk flat, with a strong median carina. Vertex apically sharply carinate. Structure otherwise as in the preceding species, but the male genitalia different (Fig. 77 a). Anal tube in lateral aspect longer and apically much narrower. Penis shorter, apex with a pair of 4-branched short and rather thick appendages, dorsal surface of stem in apical part with two irregularly dentate longitudinal lamellae, ventral surface strongly keeled medially.

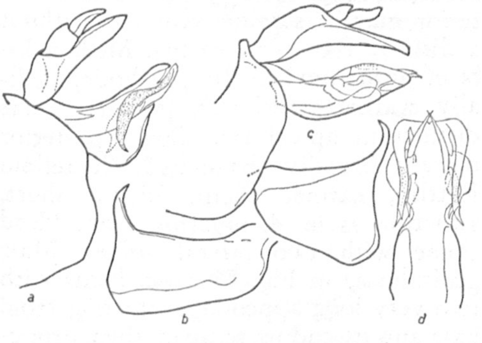

FIG. 78. *Phantia artemis* n.sp.: a pygophore, anal tube and penis from side; b stylus. — *Caesonia danae* sp.n.: c apex of abdomen from side; d apex of penis, dorsal aspect.

Both new species differ from the small-sized *C. parvula* Mel. (Mali) in the acute anal angle of the elytra.

43, 1 paratype; 33—34, 1 paratype; Darfur, Ed Daein, 1 ♂, type, and 2 paratypes, 3—7. V. 1963. On *Guiera senegalensis.*

PHANTIA Fb.

P. pinax (Fenn.), comb.n.

Caesonia pinax FENNAH 1958: 534—535.

Originally described as *Caesonia*, but in fact closely related to *Phantia subquadrata* (H.—S.), e.g. the male genitalia (Fig. 77 b—d) are very similar.

Many exx. from 24—24 a; 26; 22—25; 23; 21; 84; 35—36; 41; 33—34; 50; 55; 72—74; 59—60; 76—81. Common in meadows and savannahs. Previously known from Senegal.

P. artemis sp.n.

Length 7 mm. Very similar to *P. pinax*, but paler. Especially elytra tinged with green, in ♂ uniformly green, in ♀ with a bar of larger fuscous spots in addition to the small dots present in *pinax*. Frons considerably longer and narrower (ratio median length: breadth = 20:19), with lateral margins much less expanded below eyes. 1st antennal joint of ♂ incrassate, darkish. Elytra 1.70—1.75 × as long as broad. Male genitalia (Fig. 78 a—b): Anal tube rather narrow. Side lobes of pygophore broadly rounded. Styli relatively narrow, with a long dorso-apical horn. Penis with two long, falcate appendages, lower margin of penis with a high rounded lamella.

P. helleri Lv. (Iran) is closely related, but provided with much longer and narrower elytra and a still narrover frons.

Blue Nile: Ingessana Mts., 1 ♂, type, and several paratypes, 17—22. XI. 1962. In mountain meadows.

P. coniceps sp.n.

Length 8 mm. Like *P. indicatrix* Wk. (see Linnavuori 1962: 4), but 1) bigger, 2) vertex strongly produced (Fig. 83 e—f), narrowly conical, 1.33 × as long as broad basally, 1.25 × as long as pronotum, slightly concave in profile, provided with a faint median keel extending to tip of scutellum, 3) frons much longer, 1.44 × as long at middle as broad and 4) elytra longer, nearly 2.4 × as long as broad, cells embrowned, veins pale.

South Yemen: near Lahej, 1 ♀, type 9—15. VII. 1963.

CAESONIA St.

Very closely related to *Phantia*, differing in the two lateral spines of the hind tibiae (one in *Phantia*). The other characters (median keel of frons, size of ocelli, absence of cross veins in clavus and shape of elytra) mentioned by Melichar (1902: 255) are unreliable, since they vary considerably in the genus *Phantia.*

C. aethiopica (Lv.), comb.n.

Phantia aethiopica Linnavuori 1962: 1.

Possibly a synonym of *C. bellula* St. as interpreted by Synave (1955: 40—42) (the shape of the penis similar), although the distinct dark spots of the elytra of *aethiopica* have not been reported for *bellula* by Melichar (1902). According to his measurements the size of *bellula* is also smaller, 5.5—6 mm.

Material studied: East Africa: Kware near Moshi, 1 ♀, allotype, and Makoa, 1 ♂, type, Lindner, in Mus. Stuttgart.

C. danae sp.n.

Length 8 mm. Externally resembling *C. aethiopica,* but penis (Fig. 78 c—d) dissimilarly shaped: apical appendages shorter and dissimilarly curvate, apex of penis with two falcate median processes, under surface of penis without a long, unpaired, sharp-tipped processes.

C. rwindiensis (Lall. & Syn.) differs in e.g., the shorter and broader elytra (see Synave 1962: 89).

Upper Nile: Renk-Malakal, 1 ♂, type, and 1 ♂, paratype, 3—4. I. 1963.

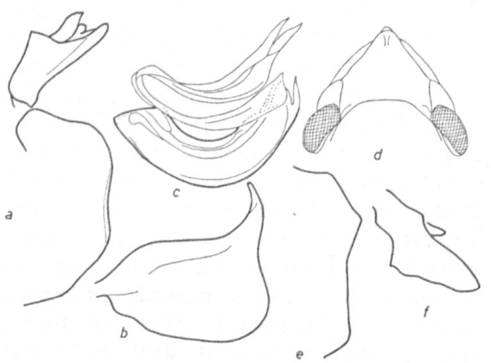

Fig. 79. *Afrophantia iphigeneia* sp.n.: a pygophore and anal tube from side; b stylus; c penis, lateral aspect. — *Juba barchanorum* sp.n.: d head (♀); e pygophore from side; f anal tube.

AFROPHANTIA Fenn.

A. iphigeneia sp.n.

Length 3.5 mm. Uniformly yellow-brown. Spines of hind tibiae black-tipped.

Very small, but relatively robust. Frons slightly broader than long at middle (19:20), lateral margins curvate and only slightly upturned; disk convex, shiny, median carina distinct only in the upper half. Vertex about twice as broad as long, apically subtruncate, anterior margin sloping ventrad, without a distinct transverse carina. Median lobe of pronotum broadly parabolic, medially ecarinate and flat, lateral carinae distinct in apical two-thirds, posterior margin broadly insinuated. Scutellum flattish, carinae blunt. Elytra short, structure as in *A. mycenis* Fenn. Hind tibiae with two lateral spines. Male genitalia as in Fig. 79 a—c. Penis with two very long appendages starting from base and extending to apex, then strongly recurved basad and reaching base of penis again.

Differing from *A. mycenis* Fenn.

(Fennah 1958: 535—537) in the smaller size, the anteriorly sloping and nearly ecarinate vertex and the male genitalia.

Equatoria: Juba-Nimule, 1 ♂, type, 10—11. III. 1963.

HAMEISHARA gen.n.

Like *Derisa* Mel., but 1) body considerably more elongate, 2) vertex (Fig. 80 a) very short, about 7 × as broad as long at middle, shortest at middle, concealed by pronotum nearly to the straight apical margin, shallowly concave, 3) upper margin of frons rounded to vertex, median keel of frons faint, in upper margin evanescent, 4) scutellum longer and narrower, apically more convex, the flattened median area much longer, narrower and more distinctly delimited and 5) elytra longer, apical margin rounded. A complete description and illustrations in Fennah 1964.

Type: *Derisa pallida* Fennah 1964.

The species of *Derisa* Mel. differ from the present genus as follows: Body shorter and broader. Darker. Vertex much longer (Fig. 80 b, c), not concealed by pronotum, anterior margin sharp, bluntly angulate, anterior compartment noticeably more concave than other parts of vertex, lateral keels ± developed. Frons with a sharp median ridge, in *D. atratula* Mel. also with faint lateral ridges, nearly vertical, upper margin sharp. Scutellum shorter and broader. Elytra with apical margin truncate or concave.

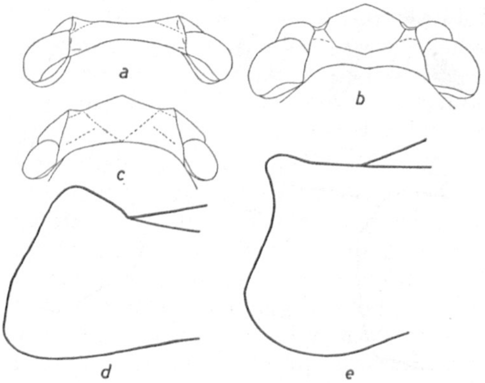

Fig. 80. *Hameishara pallida* (Fenn.): a head (removed). — *Derisa atratula* Mel.: b head; d apex of elytron. — *D. pugionata* sp.n.: c and e same.

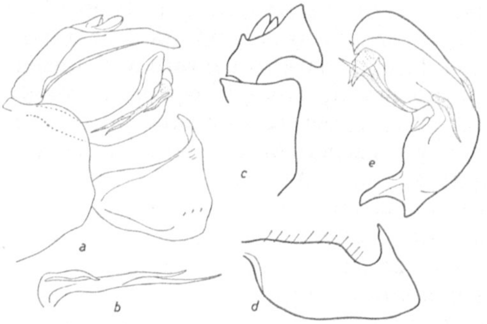

Fig. 81. *Derisa pugionata* sp.n.: a genital segment from side; b aedeagal appendage. — *Privesa pusilla* sp.n.: c pygophore and anal tube; d stylus; e penis from side.

Zarudnya Mel. is distinquished from *Hameishara* as follows: Large species. Elytra with upper and lower margins completely parallel, the dorso-apical angle therefore not produced. Vertex with apical margin rounded and faint. Frons much broader, more convex.

Hameishara is named after the first locality in which the type species was found.

H. pallida (Fenn.) — 10, 1 ex., 1. II. 1933, Priesner; 11, 1 ex.; 32, 1 ex. Eremian (Egypt, Israel).

DERISA Mel.

D. pugionata sp.n.

Length 6.5 mm. Dark brown, partly with a greyish or ochraceous tinge. Densely covered with whitish powder. Lower part of face yellow-brown, upper part of frons dark. Vertex yellow-brown, the concave apical compartment dark brown. Elytra, especially corium, with yellow-brown tinge. Legs yellowish brown.

Robust. Clypeus rather small, its upper margin nearly straight. Frons 1.24 × as long as broad, broadest at antennae, lateral margins curvate and strongly upcurved, frons therefore strongly concave, upper margin straight, sharp; median carina sharp, broadening upwards, near upper margin triangularly expanded and flattened, lateral keels absent. Vertex (Fig. 80 c) 2.27 × as broad as its median length, apical margin bluntly angulate and sharp; apical compartment triangular and concave, extending to base, other parts of vertex flattish. Eyes small. Pronotum declining apicad, median keel nearly absent, apico lateral carinae sharp, an acute eminence behind eyes. Scutellum much broader than long, with a roundish median depression, otherwise declining apicad and laterad. Elytra much as in *atratula*, but dorso-apical angle (Fig. 80 e) narrower and apical margin concave; dorsal claval vein basally strongly elevated and sharp, area on either side of it densely tuberculate. Hind tibiae with two lateral spines. Male genitalia: Side lobes of pygophore (Fig. 81 a—b) truncately rounded. Anal tube very long and narrow, shalliwly arcuate in profile. Penis with two three-branched appendages.

D. atratula Mel. (illustrations in DLABOLA 1960): Bigger.Clypeus protruding upwards, its upper margin triangular. Median keel of frons stronger not expanding dorsally, lateral keels visible, although faint. Vertex (Fig. 80 b) twice as broad as its median length, the concave apical compartment not extending to basal margin. Apical margin of elytra (Fig. 80 d) truncate, dorso-apical angle more rounded. Material studied: Iran, Djiroft, Anbar-Abad, 1 ♀, 1—18. V. 1956, Richter.

Kassala: Erkowit, 1 ♂, type, 7—10. VII. 1961.

JUBA Jac.

J. arabica Syn. — 45, 1 ♀ probably of this species. Previously known from S. W. Arabia.

J. barchanorum sp.n.

Fig. 16 d. Length 8.5—10 mm. Greatly resembling *J. arabica* e.g. in the colouring, but differing in the shape of the head (Fig. 79 d): Frons broader than long at middle (35:31), ovate in outline, lateral margins curvate and sharp, disk with a large median depression, ecarinate. Vertex 1.53—1.6 × as broad as long, lateral margins basally parallel, in front of eyes forming a blunter (♂) or sharper (♀) triangle, disk only slightly convex, medially ecarinate. Pronotum shorter than vertex (11:15). Scutellum nearly twice as long as pronotum and vertex together. Elytra as in *arabica*. Hind tibiae with two lateral spines. Male genitalia as in Figs. 79 e—f, 83 a—b. Penis with two short and thick, heavily sclerified apical appendages.

South Yemen: Sheik Othman-Lahej, 1 ♂, type, and 2 paratypes, 9—15. VII. 1963. On *Acacia* and *Tamarix* in dunes.

ULUNDIA Dist.

U. madagascariensis (Sgn.)

Redescribed by FENNAH (1957: 168—169).

23, 1 ex.; 72—71, 1ex.; 81—82, several exx. On *Acacia*. Liberia, Zaire, E. Africa, Madagascar.

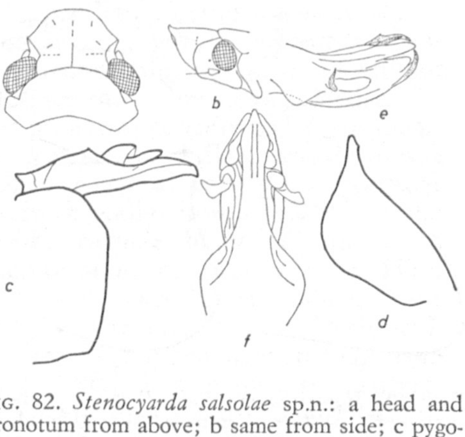

FIG. 82. *Stenocyarda salsolae* sp.n.: a head and pronotum from above; b same from side; c pygophore and anal tube; d stylus; e penis from side; f same, ventral aspect.

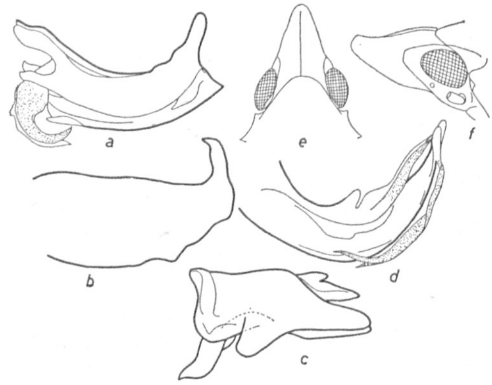

FIG. 83. *Juba barchanorum* sp. n.: a penis, lateral aspect; b stylus. — *Ulundia deidamia* sp.n.: c anal tube; d penis from side. — *Phantia coniceps* sp.n.: e head from above; f same from side.

U. deidamia sp.n.

Length 8 mm. Like *madagascariensis*, but frons ecarinate, anal tube (Fig. 83 c) shorter, dissimilarly shaped, asymmetric, and penis (Fig. 83 d) with two slender and simple appendages and two processes starting from middle of dorsal surface and directed apicad.

Ethiopia, near Harrar, 1 ♂, type, and 4 paratypes, 22—23. VI. 1963.

STENOCYARDA Fenn.

S. salsolae sp.n.

Fig. 16 d. Length 6—7 mm Reddish or coffee-brown. Under surface somewhat paler. Upper margin of frons dark.

Frons as broad as long at middle, upper part nearly semicircular in outline, then strongly tapering ventrad in lower portion, disk strongly concave, medially ecarinate. Vertex (Fig. 82 a—b) about 1.3 × as broad as long, lateral margins almost parallel in basal half, then strongly diverging in front of eyes, anterior margin broadly arched; disk flattish, apically sloping laterad. Pronotum 0.7 × as long as vertex, medially ecarinate. Scutellum only slightly longer than vertex and pronotum together (25:24). Elytra strongly tapering apicad as in *S. ocreata* (Hesse). Hind tibiae with 2 lateral spines. Male genitalia as in Fig. 82 c—f. Penis short and thick, with two short apical appendages on dorsal surface and two short processes at the middle of the stem laterally.

Differs from the other African species of the genus in the shape of the head, in the male genitalia and two lateral spines of the hind tibiae. The claval veins also unite nearer to the apex than in *S. ocreata* (Hesse).

6, 1 paratype; 10, 1 paratype; 12—13, 1 paratype; South Yemen, Sheik Othman-Lajej, 1 ♂, type, and 1 paratype, 9—15. VII. 1963; Somalia, near; 24, 1 paratype. On *Salsola battae* in Arabia.

PAROXYCHARA Lall. & Syn.

P. capeneri Lall. & Syn. — 70, 4 exx.; 68, 1 ex. Known from S. Africa and Zaire.

FLATOSARIA Mel.

F. dhalaica sp.n.

Fig. 17 c. Length 13.5 mm. Yellowish brown. Scutellum darker. Veins of elytra brownish, somewhat darker than cells.

Vertex (Fig. 84 a—b) 1.15 × as long as broad, 1.35 × as long as pronotum, lateral margins slightly insinuated at middle, otherwise nearly parallel, sharp; anterior margin of head rounded, sharp, with a small sharp lateral tubercle on either side; disk with a distinct, complete median keel. Face horizontal. Frons

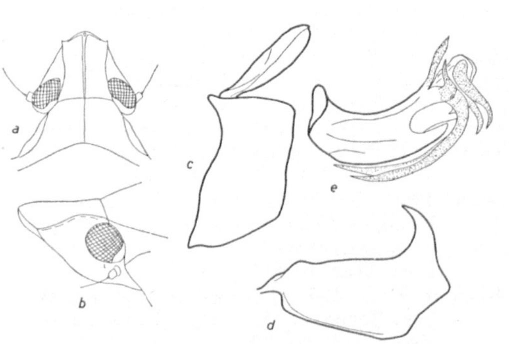

FIG. 84. *Flatosaria dhalaica* sp.n.: a head and pronotum from above; b same from side; c pygophore and anal tube; d stylus; e penis from side.

1.85 × as long as broad, broadest at middle, tapering both dorsad and ventrad, lateral margins upcurved; disk flattish, dorso- medially convex, a faint median keel present. Antennae short. Pronotum with median lobe apically nearly truncate, lateral keels distinct, concave, median keel elevated only in apical half, lateral tubercles absent. Scutellum flattish, strongly sloping anteriorly, ecarinate. Elytra tectiform, 2.43 × as long as broad; their costal membrane much broader than the costal cell, their basal corner distinctly produced anteriorly, numerous and mainly simple transverse veins present; other parts of elytra also with several cross-veins, 1 subapical line; claval veins not uniting before apex, a few cross-veins present in clavus. Hind tibiae with two lateral spines. Male genitalia as in Fig. 84 c—e. Anal tube flat. Penis with two pairs of apical appendages, the long lower appendages provided with a basal spine; moreover a single dorso-apical process present.

South Yemen, Dhala, 1 ♂, type, in British Museum and 1 ♂, paratype, in my collection, 14. IX. 1937, Scott & Britton.

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References

Capener, A. L. 1962: The taxonomy of the African Membracidae I. — Dept. S. Afr. Agric. Technol. Service, Entomol. Mem. 6:1—164.

—»— 1968 a: The taxonomy of the African Membracidae II. — Dept. S. Afr. Agric. Technol. Service, Entomol. Mem. 17:1—124.

—»— 1968 b: New Membracidae from Sudan and Ethiopia. — J. Entomol. Soc. S. Afr. 31(2):323—336.

China, W. E. & Fennah, R. G. 1960: Fulgoroidea of the Iles Glorieuses. — Naturaliste Malgache 12:133—138.

Dlabola, J. 1960: Iranische Zikaden. — Stuttgart. Beitr. Naturkunde Staatl. Mus. Nat. Stuttgart 41:1—24.

—»— 1964: Ergebnisse der Zoologischen Nubien-Expedition 1962. Teil 26. Homoptera auchenorrhyncha. — Ann. Naturhist. Mus. Wien 67:615—626.

Fennah, R. G. 1957: Fulgoroidea from the Belgian Congo. — Ann. Mus. R. Congo, Sci. Zool. 59(8):1—206.

—»— 1958: Fulgoroidea from West Africa. — Bull. I.F.A.N. 20:460—538.

—»— 1963: The Delphacid species-complex known as Sogata furcifera (Horvath). — Bull. Entomol. Res. 54:45—79.

—»— 1964 a: A new species of Derisa from Israel (Fulgoroidea, Flatidae). — Ann. Entomol. Fennici 30:191—193.

—»— 1964 b: Delphacidae from Madagascar and the Mascarene Islands. — Trans. R. Entomol. Soc. London 116:131—150.

—»— 1969: Delphacidae (Homoptera, Fulgoroidea) from the Sudan Republic. — Acta Entomol. Fennici 26:1—78.

—»— 1972: A revision of the genus Matutinus Distant (Homoptera: Fulgoroidea: Delphacidae). — Bull. Entomol. Res. 61:421—461.

Ishihara, T. 1949: Revision of the Araeopidae of Japan, Ryukyu Islands and Formosa. — Sci. Rep. Matsuyama Agric. College 2:1—102+17 plates.

Lallemand, V. 1920: Notes sur les Cercopides africains. — Rev. Zool. Bot. Afr. 7:260—283.

—»— 1925: Hemiptera Homoptera. Zoological results of the Swedish Expedition to Central Africa 1921. — Arkiv Zool. 18:8.

—»— 1930: Homoptères nouveaux de la Somalie italienne méridionale. — Boll. Soc. Entomol. Ital. 62:185—187.

—»— 1935: Homoptera in Spedizione Zoologica del Marchese Saverio Patrizi nel Basso Giuba e Nell'oltregiuba. — Ann. Mus. Genova 58:79—84.

—»— 1949: Révision des Cercopinae I. — Inst. R. Sci. Nat. Belgique, Mém. 32:1—193 + 4 plates.

—»— 1959: Révision des espèces africaines de la famille Fulgoridae. — Companhia Diamantes Angola, Serviços Culturais 00:41—123.

Lallemand, V. & Synave, H. 1961: Révision des Cercopinae II. — Inst. R. Sci. Nat. Belgique, Mém. 66:1—153 + 11 plates.

Lindberg, H. 1958: Hemiptera Insularum Caboverdensium. — Soc. Sci. Fenniae, Comment. Biol. 19(1):1—246.

Linnavuori, R. 1962 a: Hemiptera of Israel III. — Ann. Zool. Soc. Vanamo 24(3):1—108.

—»— 1962 b: Studien an der Gattung Phantia Fieb. — Stuttgart. Beitr. Naturkunde Staatl. Mus. Nat. Stuttgart 89:1—4.

—»— 1964: Hemiptera of Egypt, with remarks on some species of the adjacent Eremian region. — Ann. Zool. Fennici 1:306—356.

—»— 1970: On the Hysteropterum species of NE Africa (Hom., Issidae). — Ann. Entomol. Fennici 36:213—217.

—»— 1971: Hemiptera of the Sudan, with remarks on some species of the adjacent countries 1. The aquatic and subaquatic families. — Ann. Zool. Fennici 8:340—366.

Maa, T. C. 1963: A review of the Machaerotidae. — Pacific Insects Monogr. 5:1—166.

Melichar, L. 1902: Monographie der Acaloniiden und Flatiden. — Ann. Kaiserl. Königl. Naturhist. Hofmus. Wien 17:178—253.

—»— 1915 a: Monographie der Lophopinen. — Ann. Mus. Nat. Hungarici 13:337—385.

—»— 1915 b: Neue Cercopidenarten. — Verh. Zool. Bot. Ges. Wien 65:1—16.

Metcalf, Z. P. 1943: Fulgoroidea Araeopidae (Delphacidae). — Gen. Cat. Hemiptera 4(3):1—552.

—»— 1955: Fulgoroidea Ricaniidae. — Gen. Cat. Homoptera 4(16):1—198.

Muir, F. 1926: On some new or little-known Delphacidae from South Africa. — Ann. Mag. Nat. Hist. (9)17:17—35.

—»— 1928: Notes on some African Derbidae II. — Ann. Mag. Nat. Hist. (10)1:498—525.

—»— 1929: New and little-known African Delphacidae. — Ann. Mag. Nat. Hist. (10)4: 186—222.

—»— 1934: New and little-known Fulgoroidea. — Ann. Mag. Nat. Hist. (10)14:561—586.

Stål, C. 1866: Hemiptera Africana IV. — 277 pp. Holmiae.

Synave, H. 1953 a: Cixiidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Albert 79(2):9—34.

—»— 1953 b: Cixiidae. — Inst. Parc. Nationaux Congo, Exploration Parc. National Upemba 23:1—49.

—»— 1955: Flatidae. — Inst. Parcs Nationaux Congo, Exploration Parc. National Upemba 32:21—47.

—»— 1957 a: Issidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Upemba 43:1—78.

—»— 1957 b: Cercopidae. — Inst. Parcs Nationaux Congo, Explation Parc National Upemba 43:83—135.

—»— 1957 c: Issidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Albert 90:3—6.

—»— 1957 d: Meenoplidae. — Inst. Parcs National Congo, Exploration Parc National Albert 90:7—30.

—»— 1958: Lophopidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Upemba 50:19—24.

—»— 1960: Cixiidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Garamba 18:7—44.

—»— 1961: Meenoplidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Garamba 20:1—37.

—»— 1962 a: Flatidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Garamba 35:73—92.

—»— 1962 b: Lophopidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Garamba 28:1—36.

—»— 1965: Dictyopharidae. — Inst. Parcs Nationaux Congo, Exploration Parc National Garamba 47:1—63.

Notulae Entomologicae LIII:138—140, 1973

Einige nord—ostpaläarktische Euaesthetus-Arten (Coleoptera, Staphylinidae)

11. Beitrag zur Kenntnis der Euaesthetinen

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Abstract

Euaesthetus elongatus Motschulsky 1860 = *E. bipunctatus* (Ljungh 1804); *E. ruficollis* Motschulsky 1860 spec.propr. (nec syn. ad *E. bipunctatus* (Lj.)); *E. wuorentausi* Bernhauer 1927 = *E. ruficollis* Motschulsky 1860. Genitalia of *E. ruficollis* Motsch. and *E. granulipennis* Epp. are figured for the first time.

Die nordhemisphärische Gattung *Euaesthetus* Gravenhorst bedarf einer kritischen Revision. Ich habe eine solche in Angriff genommen und lege hier einige Ergebnisse, nord- und ostpaläarktische Taxa betreffend, vor.

Für Materiallausleihe bin ich vor allen den Herren Drs. Fr. Janczyk (Wien), A. N. Shelochovzev (Moskau), W. F. Shilov (Leningrad), H. Silfverberg (Helsinki) und R. L. Wenzel (Chicago) zu Dank verflichtet.

Euaesthetus bipunctatus (Ljungh 1804)

Stenus bipunctatus Ljungh 1804, Web. Mohr-Arch. syst. Naturgesch. 1:68 f. (nec Erichson 1839)
Euaesthetus bipunctatus Puthz 1969, NachrBl. Bayer. Ent. 18:15 (Aedoeagus)
Euaesthetus elongatus Motschulsky 1860, Bull. Soc. nat. Moscou 33:557 f. Syn. nov.

Aus dem Zoologischen Museum Moskau lagen mir die Syntypen der Motschulskyschen Art vor: ein Plättchen mit einem ♀ und einem Exemplar ohne letzte Abdominalsegmente sowie ein zweites Plättchen mit 3 ♂♂. Als Lektotypus habe ich das ♂ des zweiten Plättchens designiert, das sich auf diesem links oben befindet, von mir rot umrandet, (8. Sternit, Rest des Abdomens und Aedoeagus getrennt aufgeklebt), es fehlt der linke Fühler. Die Nadel dieses Plättchens trägt folgende Etiketten: 1: Am Baical (Motsch. Handschr.); 2: *Evaesthetus elongatus* Motsch. (rot, neues Etikett des Mus. Moskau); 3: ♂-Lektotypus links oben/Puthz 1973; 4: 2 ♂♂ — Paralektotypen; 5: *Euaesthetus elongatus* Motschulsky vid. V. Puthz 1973; 6: = *Euaesthetus bipunctatus* (Ljungh) det. V. Puthz 1973. An der Nadel des anderen Plättchens befinden sich die Etiketten: 1: L. Baical (rot); 2: *Evaesthetus elongatus* mihi L. Baical ("Trauerrandetikett" mit Motsch. Handschrift); 3: 1 ♀, 1 ? — Paralektotypen. Genitalpräparation der Stücke ergab Konspezifität mit *bipunctatus* (Lj.).

Euaesthetus bipunctatus ist mir aus Nord- und Mitteleuropa, dem europäischen Sibirien (Sahlberg 1880:97; 1 ♀: Komi ASSR, Uchta, 8. 5. 1972, Shilov) und vom Baikalsee bekannt. Das bei Horion (1963:402) aus der Mandschurei gemeldete Stück gehört zu einer anderen, noch unbeschiebenen Art. Die von Poppius (1909:20, Jakutsk) gemeldeten Stücke habe ich noch nicht gesehen.

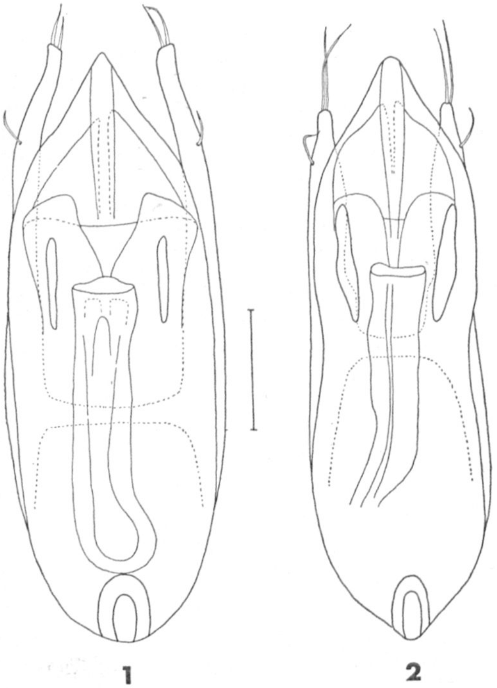

Abb. 1,2: Dorsalansicht der Aedoeagi. Abb. 1: *Euaesthetus ruficollis* Motsch. (Ust Aldan), — Abb. 2: *E. granulipennis* Epp. (Baikal). Mass-Stab = 0,1 mm.

Euaesthetus ruficollis Motschulsky, 1860 spec. propr.

Euaesthetus ruficollis Motschulsky 1860, Bull. Soc. Nat. Moscou 33:558 f.; Poppius, 1909, Öfvers. finska VetenskSoc. Föhr. 51, A 4:20
Euaesthetus ruficollis J. Sahlberg, 1880, K. svenska VetenskAkad. Handl. 17 (4):97
Euaesthetus wuorentausi Bernhauer 1927, Koleopt. Rdsch. 13:90 f. nov.syn.

Im Col. Cat. pars 29 steht *E. ruficollis* als Synonym bei *E. bipunctatus.* Diese Synonymie ist unrichtig wie ich mich anhand der Typen überzeugen konnte. Aus dem Zoologischen Museum Moskau erhielt ich die beiden Syntypen des *ruficollis,* beide auf einem Zelluloidplättchen, an der Nadel folgende Etiketten: 1: (rot, unleserlich) Kuluta Bädr. autn. (= automne ?) Moor; 2: *Euaesthetus ruficollis* mihi Transbaicalia (beide Etiketten Motsch. Handschr.). Ich habe die Tiere um- und genitalpräpariert, dabei ergab sich Konspezifität mit den Typen des *wuorentausi* Bernh. (Museum Helsinki und Field Museum of Natural History, Chicago). Den Aedoeagus des *ruficollis* gibt Abb. 1 wieder: er zeigt, das es sich bei dieser Art um die Schwesterart des nordostpaläarktischen *E. granulipennis* Epp. handelt.

Von ruficollis konnte ich noch folgendes Material untersuchen: 3 ♂♂, 1 ♀: Shigansk; 1 ♂: Fl. Lena; 1 ♂, 4 ♀♀: Ust Aldan; 1 ♂: Batylim, alle Poppius leg. (Mus. Helsinki, Deutsches Entomologisches Institut und coll. m.) sowie 3 ♂♂, 4 ♀♀: Komi ASSR, Polarer Ural, am (Fluss) Sob, 9. 7. 1971, Shilov (coll. Shilov, coll.m.).

E. ruficollis unterscheidet sich von *E. bipunctatus* leicht durch andere Färbung, kürzere Elytren und erheblich weitläufigere Punktierung, von *E. granulipennis* (schwerer) durch feinere, flachere und dichtere Elytrenpunktierung und den Aedoeagus.

Euaesthetus granulipennis Eppelsheim, 1887

Euaesthetus granulipennis Eppelsheim 1887, Dt. ent. Z. 31:429 f.

Von dieser Art untersuchte ich die Typen (Museum Wien), 1 ♂, 2 ♀♀ von Wladiwostok, Eppelsheim (coll. Koltze-DEI und coll. m.), 2 ♂♂ ibidem, Frieb (Museum Frey München) und 1 ♂ vom Baikal (coll. Sharp — British Museum Nat. Hist.). Den Aedoeagus gibt Abb. 2 wieder.

Keine der hier behandelten *Euaesthetus*-Arten ist mit einer der vielen aus Nordamerika beschriebenen Spezies näher verwandt oder gar konspezifisch.

Literatur

Bernhauer, M. 1927: Neue Staphyliniden des paläarktischen Faunengebietes. — Koleopterol Rundschau 13:90—99.

Berhnauer, M. & Sschubert, K. 1911: Coleopterorum Catalogus, pars 29:87—190.

Eppelsheim, E. 1887: Neue Staphylinen vom Amur. — Deutsche Entomol. Zeitschr. 31:417—430.

Horion, A. 1963: Faunistik der mitteleuropäischen Käfer IX: Staphylinidae 1. Teil Micropeplinae bis Euaesthetinae. — XII + 412 pp. Überlingen.

Motschulsky, V. de 1860: Enumération des nouvelles espèces de coléoptères rapportées de ses voyages. — Bull. Soc. Nat. Moscou 33:539—588.

Poppius, R. B. Beiträge zur Kenntnis der Coleopteren — Fauna des Lena — Thales in Ostsibirien, IV. Staphylinidae. — Öfversigt finska Vetenskaps Soc. Förhandl. 51(A4):1—53.

Puthz, V. 1969: Euaesthetus superlatus Peyerimhoff neu für Deutschland und Österreich (Coleoptera, Staphylinidae). — Nachrichtenblatt Bayerischen Entomol. 18:13—16.

Sahlberg, J. 1880: Bidrag till nordvestra Sibiriens Insektfauna. Insamlade under expeditionerna till Obi och Jenissej 1876 och 1877. I. Cicindelidae, Carabidae, Dytiscidae, Hydrophilidae, Gyrinidae, Dryopidae, Georyssidae, Limnichidae, Heteroceridae, Staphylinidae och Micropeplidae. — Kungl. svenska Vetenskaps Akad. Handl. 17(4):1—115.

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De naturvetenskapliga museerna, samfunden och föreningarna har kommit överens att inom de biologiska vetenskaperna använda enhetskoordinatsystemet för betecknande av fyndplatser och iakttagelseorter. Det är därför att rekommendera att alla entomologer inför koordinatbeteckningar på de etiketter de låter trycka.

Enhetskoordinatsystemet är benämningen på ett rätvinkligt koordinat- och rutsystem, vars p-axel sammanfaller med meridianen E 27° och som är angivet på de grund- och topografiska kartor i skala 1 :20 000 och 1 : 100 000 som har utkommit efter år 1962, samt på de år 1967 utkomna generalkartorna i skala 1 : 400 000. Ifrågavarande koordinatsystem anges på de nämnda kartorna med röda (bruna) rutor eller marginalbeteckningar. Enhetskoordinaterna är desamma som de på grundkartorna med svart angivna sifferbeteckningar och rutor, vilkas p-axel sammanfaller med p-axeln i enhetskoordinatsystemet.

Koordinattalet betecknar ett kvadratiskt område, vars storlek bestäms av antalet siffror i koordinatbeteckningarna. Områdena kan sammanslås till större eller delas i mindre rutor med decimaler. Därvid är koordinatbeteckningarnas sifferantal i motsvarande grad mindre eller större. Varje rutas decimalindelning sker med siffrorna 0 till 9 nedifrån uppåt och från vänster åt höger. Koordinatbeteckningen är tvådelad. Dess första del anger rutans p-koordinat och dess senare del rutans i-koordinat. Mellan dessa delar kan i skrift användas ett kolon. p-koordinaten börjar alltid med siffran 6 eller 7, vilken betecknar 1 000 km. i:s värde i origo vid p-axeln är 500 km. Antalet siffror i koordinattalen är sålunda alltid udda och p innehåller alltid en siffra mera än i.

Angivande av koordinaterna för en ort eller plats sker med den noggrannhet, som i det aktuella fallet kan betecknas som ändamålsenlig. Om t.ex. platsens läge anges med en noggrannhet av 1 kvadratmil, är koordinattalet 5-siffrigt (t.ex. 669 : 40 eller 66940). Om angivelsen sker med noggrannheten av 1 ha är koordinattalet 9-siffrigt (t.ex. 66940 : 4009 eller 669404009). I sammandrag gällande utbredningsuppgifter och i andra därmed jämförbara fall insamlas uppgifterna i regel per grundruta, varmed avses en ruta vars yta är 1 kvadratmil. Vid lokala undersökningar används givetvis mindre rutor.

Utöver platsangivelse baserad på rutsystemet bör platsbeteckningen lämpligen samtidigt även ske med angivande av kommunens, byns, terrängformationers osv. namn, likaså skall beteckningarna för de naturvetenskapliga provinserna fortfarande användas. Vid användningen av kommunernas namn är det skäl att beakta, att kommunnamnet betecknar det område, som kommunen omfattade under det år, under vilket iakttagelsen gjordes.

Finland 669 : 40
N. Sibbo
24. VII. 1971
Kalle Johansson

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The Psocoptera of the Canary Islands

Martin Meinander

(Zoological Museum, N. Järnvägsgatan 13, SF-00100 Helsingfors 10)

Abstract

Twenty-seven species of Psocoptera are recorded from the Canary Islands; the records by old workers of 3 wide-spread species are dubious, 11 species are endemic to the Canary Islands, 3 are also recorded from the adjacent Atlantic areas and the rest are widely distributed. *Peripsocus fortunatus* Navas is found to be synonymous with *P. phaeopterus* (Stephens), which, together with *Trogium pulsatorium* (Linné) and *Atlantopsocus adustus* (Hagen), is recorded as new for the Canary Islands. *Mesopsocus canariensis* sp.n., *M. wardi* sp.n., *Atlantopsocus personatus hierroensis* ssp.n. and *A. triangularis* are described and *Nephax fortunatus* (= *Perientomum fortunatus* Navas) and *Lachesilla gridellii* (= *Caecilius gridellii* Navas) are redescribed.

Introduction

Summarizing the knowledge of the Psocoptera of the Mid-Atlantic Islands about thirty years ago, BADONNELL (1944) listed 24 species from the Canary Islands. Only eight had been seen by BADONNEL himself, nine were reported by NAVAS and two by MCLACHLAN, and all were in need of revision. I have had the opportunity to study three small new collections of Psocoptera from the Canary Islands made by the late O. Lundblad of Stockholm, L. M. Guichard and P. H. Ward of London, and A. Fjellberg of Bergen, and have tried to revise all the Canarian species.

Twenty-eight species are listed here of which 27 are recorded from the islands, and 1, *Tapinella castanea*, is reported from bananas imported from the Canary Islands and will probably eventually be found here. The records of *Trichopsocus dalii*, reported by MCLACHLAN (1882), and *Psococerastis gibbosus* and *Loensia variegata*, reported by NAVAS (1906), are all very dubious. These three species are widespread in Europe and the records from Canary Islands are most probably the results of misidentifications. The identity of one species, *Caecilius cabrerai*, will remain unsolved until the type is found.

The fauna of Psocoptera on the Canary Islands is still very imperfectly investigated. Most records are from the island of Tenerife, from which are recorded 16 of the 23 species definitely known from the Canary Islands. There are still no records from Fuerteventura, and the numbers of species reported from the other islands are: Hierro 6, La Palma 2, Gomera 9 and Gran Canaria 10. The following 11 species are endemic to the Canary Islands: *Cerobasis canariensis*, *Nephax fortunatus*, *Caecilius cabrerai*, *C. fortunatus*, *Lachesilla gridellii*, *Ectopsocus strauchi*, *Elipsocus fasciatus*, *Elipsocus* sp. 1, *Mesopsocus canariensis*, *M. wardi* and *Atlantopsocus triangularis.* The anthropochorous species *Lepinotus inquilinus*, *L. reticulatus* and *Trogium pulsatorium* have a cosmopolitian distribution, *Mesopsocus laterimaculatus*, *Atlantopsocus adustus* and *A. personatus* are recorded from the adjacent Atlantic areas, and the rest of the species are fairly widespread in the Palearctic Region.

The museums in which the material is deposited are abbreviated as follows:

BMNH — British Museum (Natural History), Cromwell Road, London, SW 5BD, England
CSZ — Colegio del Salvador, Cardenal Gomá 5—7, Zaragoza, Spain
MNHN — Muséum national d'histoire naturelle, 45 bis, Rue de Buffon, F-75005 Paris (V^e)
MZB — Instituto municipal de Ciencias naturales, Museo de Zoologia, P. O. Box 593, Barcelona (3), Spain
MZH — Universitetets Zoologiska Museum, N. Järnvägsgatan 13, SF-00100 Helsingfors 10
NRS — Naturhistoriska Riksmuseum, S-104 05 Stockholm 50
ZMUB — Zoologisk Museum, Universitetet i Bergen, Musépl. 3, N-5014 Bergen.

Acknowledgements. — I am indebed to the late Professor Olof Lundblad (Stockholm), who put his collection of Canarian Psocoptera at my disposal, to Mrs. Theresa Clay (BMNH), who allowed me to examine the collection made by Guichard and Ward and lent me some types and to Dr. Astrid Löken (ZMUB) who lent me the specimens collected by Fjellberg. Mr. Luis Palazón (CSZ) kindly helped me to find Navas' specimens and lent those which could be found, thus making a revision of some of Navas' species possible.

List of species

Family Trogiidae

Cerobasis canariensis (Enderlein, 1910)

Myopsocnema canariensis ENDERLEIN, 1910:169, f. 3—4 (description). (Types: 2 ♂♂ syntypes; "Canarische Inseln. An Myrte im August"; deposition unknown.)

Myopsocnema annulata BADONNEL, 1944:53 faunistic and morphological notes); BADONNEL, 1946:240 (listed). (non *Clothilla annulata* Hagen, 1865.)

The differences between *C. canariensis* and *C. annulata* (Hagen, 1865) mentioned in ENDERLEIN's (1910) description of the former species, are mainly found in the colour pattern and might be due to intraspecific variations, some pale specimens of *C. annulata* being very different from more strongly coloured ones. The present material of two specimens is not large enough to allow a decision as to whether the Canarian population does or does not belong to a separate species.

BADONNEL (1944:53) cited as *Myopsocnema annulata* one specimen from Gran Canaria but mentions that there are certain differences between it and the species described as *annulata* by ENDERLEIN 1905. *C. annulata* has 23 antennal segments and BADONNEL mentions that the Canarian specimen had 24 segments left although the antenna was broken. In the present material one antenna has 28 segments and the other three are broken. ENDERLEIN (1905) mentions that there are seven bristles in the wing of *annulata,* while BADONNEL records 10 bristles in his Canarian specimen. ENDERLEIN's (1910) two specimens of *C. canariensis* had lost their wings. One of the present two specimens had one wing left, on which I counted seven bristles, the same number as in ENDERLEIN's (1905) *annulata.* In ENDERLEIN's drawing the bristles are arranged in two irregular lines with three bristles each, the seventh one being separate. In the present specimen five bristles are arranged in one longitudinal line and the remaining two are separate. The arrangement of the bristles may well vary rather greatly intraspecifically and is thus probably not of taxonomic significance, while the number of antennal segments seems to be stable within the species of the family, and this feature perhaps indicates that the Canarian population is an independent species to which BADONNEL's specimen also belongs. Until more material is available it thus seems preferable to retain ENDERLEIN's name for the Canarian specimens.

ENDERLEIN did not mention any specific locality, BADONNEL records the species from Gran Canaria.

Present material: Hierro, 1960-06-13, 1 ♀ (NRS); Tenerife, Aguamansa, 1960-06-29, 1 ♀, (NRS).

Lepinotus inquilinus Heyden, 1850

Lepinotus inquilinus HEYDEN, 1850:84 (description); BADONNEL, 1944:53 (faunistic note); BADONNEL, 1946:239 (listed); BROADHEAD, 1949:80 (synonymy).

Cuixa canaria NAVAS, 1927:151, f. 2 (description); BADONNEL, 1944:54 (reference); BADONNEL, 1946:240 (listed). (Type: ♂ holotype; Italy, Genova, from bananas imported from Las Palmas; Museo Civico di Storia Naturale, Trieste)

Recorded from Gran Canaria by BADONNEL 1944. BROADHEAD (1949) examined the type of Navas' species *Cuixa canaria* reported to originate from Las Palmas and stated that it was conspecific with *L. inquilinus.*

Lepinotus reticulatus Enderlein, 1905

Leptinotus reticulatus ENDERLEIN, 1905:31, f. 9, pl. 1:1-2, 2:12, 19, 23 (description); BADONNEL, 1944:53 (faunistic note); BADONNEL, 1946:240 (listed).

Recorded from Gran Canaria.

Trogium pulsatorium (Linné, 1758)

Termes pulsatorium LINNÉ, 1758:610 (description).

This widespreod species was not previously recorded from the Canary Islands.

Present material: Hierro, 1960-06-13, 1 ♀ (NRS).

Family Amphientomidae

Nephax fortunatus (Navas, 1917), new combination

Fig. 1.

Perientomum fortunatum NAVAS, 1917a:20, f. 9 (description); BADONNEL, 1944:53 (systematic note). (Type: ♂ holotype; Tenerife, Montaña de Guerra; CSZ.)

? — *fortunatum* BADONNEL, 1946:240 (listed).

BADONNEL (1944) has already pointed out that this species is evidently an amphientomid and that its assignation to the lepidopsocid genus *Parientomum* is thus incorrect. The type and two additional male specimens determined by Navas as *Perientomum fortunatum* and fitting his description of the species was found in CSZ, and an investigation of them proved BADONNEL's opinion correct. The species is evidently congeneric with *Nephax angolensis* Badonnel from Angola (described by BADONNEL 1955), and although there are certain differences between the present species and *N. sofadanus*, the type species of the genus recorded from Israel, it seems reasonable to assign the species to *Nephax*, at least until the value of the genera of the family has been elucidated by a more thorough morphological investigation.

NAVAS' description is very superficial and the species is in need of a redescription.

Head yellow to brown, darker medially on vertex along median epicranial suture. Clypeus finely striate with eight light curved vertical bands resolvable into spots on each side. Laterally a blackish band from clypeus to compound eyes. First and basal part of second segment of maxillary palpi pale, the end brown. Compound eyes dark brown. Antennae 1.8 mm, dark brown with dark brown rather long hairs.

Head rounded, in profile nearly hemispherical, excavate behind with a rather sharp-edged vertex. Eyes rather small, nearly hemispherically protruding, not overtopping vertex. Diameter of eye 0.28—0.32 mm, distance between eyes 0.48—0.54 mm, IO/D 1.8. Eyes almost without pubescence, between some ommatidia very short hairs, slightly

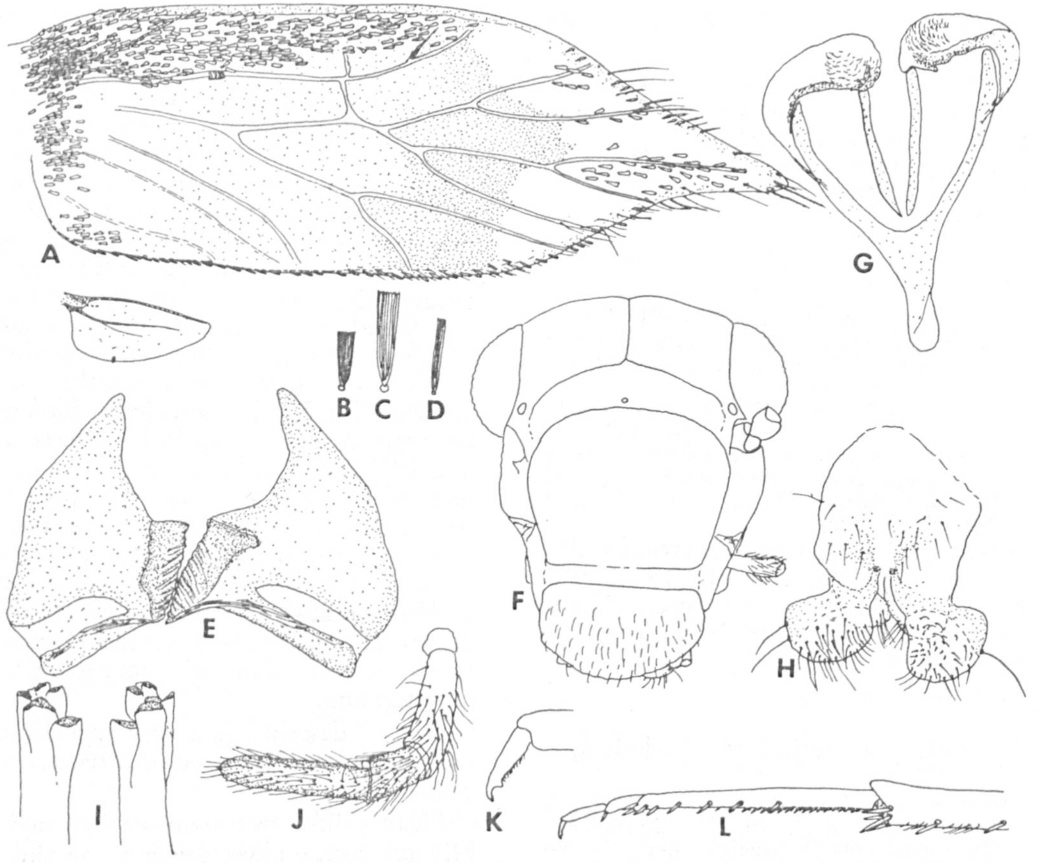

FIG 1. Male of *Nephax fortunatus.* A. wings, B—C. scales from subcostal area of fore wing, D. scale on hind margin of fore wing, E. mandibles in frontal view, F. head in frontal view. G. phallosome, H. labium in caudal view, I. laciniae in caudal view, J. maxillary palpus in frontal view, K. claw of hind tarsus, L. hind tarsus.

longer than half the width of the ommatidium, evidently similar to those in *N. angolensis.* Median epicranial suture well marked and black for its entire length, frontal suture more inconspicuous but distinct. Three ocelli. The lateral ones very close to the compound eyes slightly dorsally of the antennal sockets, at the end of the frontal suture. Median ocellus very small and close to dorsal margin of clypeus. PERMAN (1935) does not report any median ocellus in *N. sofadanus,* perhaps it was overlooked because of its smallness? In *N. angolensis* the position of the ocelli are similar to those in present species. Frons very narrow, greatly reduced to advantage of clypeus, which is large and broad but only slightly tumescent. Antennae broken or lost, only scape and pedicel of left antenna left, both these segments about as long as broad. Maxillary palpi without sense-spine on second segment, distal part of second segment and segments 3—4 with a rather long and dense bristly ciliation (Fig. 1J).

Mandibles with rather pointed distal lobes (Fig. 1E). Labial palpi almost spherical (Fig. 1H). Lacinae slightly curved outwards, before apex with a truncate tooth on inner side, apically divided into several truncate teeth (Fig. 1I). Vertex, frons and clypeus evidently without ciliation, genae with short hairs.

Thorax dorsally pale, laterally with a longitudinal black band.

Legs with scales on femora, tibiae and tarsi. Fore legs lost. Mid tibia with two and hind tibia with four end-spurs. Hind tibia (Fig. 1L) before apex with two—four short additional spur-like spines. First tarsal segment with six—seven knife-like bristles in addition to the two end-spurs and 17—20 ctenidobothria. Second tarsal segment without ctenidobothria but with one end-spur. Claws with a single pre-apical tooth, preceded by nine hairlets (Fig. 1 K). Length of hind femur 0.6 mm, of hind tibia 1.1 mm, of tarsal segments 0.6 mm, 0.1 mm, 0.1 mm. Mid tibia dark brown with two light transverse bands, one slightly basal and one apical of middle. Hind tibia dark brown with a light transverse band apically. Tarsi dark brown.

Fore wings 1.2—1.4 mm, reaching to the end of abdomen, convex, pergameneous with an acuminate apex, similar in form to those of *N. angolensis* and *N. sofadanus* (Fig. 1A). *Sc* almost the same as in *N. angolensis,* divided into three parts; a distinct basal part, a small veinlet entering R_1 slightly distally of fork of *R* (basally of fork in *N. angolensis*) and a distinct oblique distal part. PEARMAN does not report any medial veinlet or distal part in *N. sofadanus.* A distinct stigmapophyse present on *R. Rs* coalesces for a distance with *M* as in *N. sofadanus,* while in *N. angolensis* they meet in a point. *Rs* bifurcate and *M* trifurcate. *Cu* forked as in *N. angolensis* whereas it is simple in *N. sofadanus.* Scales along basal and fore margin frontally and basally of R1. Some scales also present at apex of wing, mainly along the veins R_{2+3}, R_{4+5}, M_1 and M_2. The scales are of different sizes but all straight-truncate and longitudinally striate (Fig. 1 B—C). Along the wing margins are a special kind of very narnow scales (Fig. 1 D). Principal scales either dark brown or hyaline, marginal scales hyaline. Marginal fringes very long. Hind wings reduced to triangular vestiges with traces of a longitudinal vein with a single branch, not scaled or ciliated. Length of fore wing 1.9 mm, of hind wing 0.4 mm. Fore wing in the distal third with a greyish brown fascia, which apically has a distinct limit but fades gradually basad. This fascia is in some specimens reduced to two marginal spots as in *N. sofadanus.* Apex of fore wing hyaline. Veins concolorous with the membrane.

Abdomen short, brown. Epiprocts rather densly haired, paraprocts without spurs or sense-fields but with a slightly tumescent hyaline area dorsally and basally, which is similar to a sense-field, but without trichobothria. Phallosome (Fig. 1 G) similar to that of *N. angolensis* but with a pair of sclerotized longitudinal median rods. Distal median part much longer and broader than in *N. angolensis.*

So far only recorded from Tenerife.

Present material: Tenerife, Montaña de Guerra, ♂ holotype, A. Cabrera (CSZ); Laguna, 1908, 3 ♂♂ 4 larvae (CSZ); Candelaria, 1972-04-23, 2 ♂♂ 1 larva, A. Fjellberg (UZMB). The material in CSZ from Laguna 1908 labelled *P. fortunatum* by Navas included 1 ♀, 4 larvae of *Mesopsocus laterimaculatus* and an additional indetermined larva.

Family Pachytroctidae

Tapinella castanea Pearman, 1932

Tapinella castanea PEARMAN, 1932:241, f. 1 (description); BADONNEL, 1944:54 (cited); BADONNEL, 1946:240 (listed). (Type: ♀ holotype; Britain, Bristol, from bananas imported from the Canary Islands; BMNH.)

The type specimen was reported to be imported from the Canary Islands. As no other specimen and no record is known from the islands, the presence of the species in the Canarian fauna needs confirmation.

Family Caeciliidae

Caecilius cabrerai Navas, 1921

Caecilius cabrerai Navas, 1921:93 (description); Badonnel, 1944:54 (identity discussed); Badonnel, 1946:240 (listed). (Type: sex?; »Canarias»; deposition unknown).

According to Badonnel 1944, the species was collected on Tenerife. Its identity must remain unsolved until the type is investigated.

Caecilius flavidus (Stephens, 1836)

Psocus flavidus Stephens, 1836:122 (description); *Caecilius flavidus* Badonnel, 1944:54 (faunistic note); Badonnel, 1946:240 (listed).

The species, which is very common in Europe, is recorded once from Gran Canaria.

Caecilius fortunatus Enderlein, 1929

Caecilius fortunatus Enderlein, 1929:223, f. 2 (description); Badonnel, 1944:55 (listed); Badonnel, 1946:240 (listed); Meinander, 1966:107, f. 1 (faunistic note). (Type: syntypes; Tenerife; deposition unknown.)

Previously recorded only from Tenerife.

Present material: Hierro, above Frontera 100 m, 1966-07-29, 4 ♂♂ 3 ♀♀ (BMNH), 2 ♂♂ 2 ♀♀ (MZH); Hierro, Valverde 500 m, 1966-07-26, 1 ♀ (BMNH); Gomera, above Agullo 300 m, 1966-08-07, 1 ♂, 4 ♀♀ (BMNH); Laguna Mesa de Mola, 1910-03-02, 1 ♂ 1 ♀ (CSZ); Laguna, 1906, 1 ♀, Cabrera (CSZ); 1908, 1 ♀, Cabrera (CSZ); Tenerife, Icod Alto, 1960-06-10, 1 ♀ (NRS); Mercedes, 1960-05-11, 1 ♀ (NRS); Gran Canaria, El Palmital 40 m, 1966-06-24, 1 ♂ (BMNH).

Graphopsocus cruciatus (Linné, 1768)

Hemerobius cruciatus Linné, 1768:225 (description). *Graphopsocus cruciatus* Badonnel, 1944:55 faunistic note); Badonnel, 1946:240 (listed); Meinander, 1966:110 (faunistic note).

The species is distributed over a great part of the Holarctic Region. So far the only records from the Canary Islands are from Tenerife and Gran Canaria.

Present material: Gomera, above Agullo 300 m, 1966-08-07, 1 ♂ 1 ♀ (BMNH).

Family Lachesillidae

Lachesilla gridellii (Navas, 1927), new combination

Fig. 2.

Caecilius gridellii Navas, 1927:150, f. 1 (description); Badonnel, 1944:54 (systematic position discussed); Badonnel, 1946:240 (listed). (Type: syntypes; Italy, Genova, from bananas imported from Las Palmas; deposition unknown.)

As Badonnel (1944) has already pointed out, *Caecilius gridelli* evidently belongs to the genus *Lachesilla*. The present material contains a species of *Lachesilla*, which is not conspecific with any of the adequately described European species and I wish to associate it with Navas' name, although its conspecifity with his material cannot be verified until the types have been traced and investigated. Navas (1913) has described three species of the genus from Spain, *L. gobiernoi*, *L. machi* and *L. muncunilli*. These are also in need of a redescription before their identity can be ascertained, and some of them may be conspecific with the present one.

Description of the present male specimen:

Head (Fig. 2 A) dark brown with a slightly lighter band from the ocelli to the antennae and a light area medially on frons. Epicranial suture distinct, blackish brown. Postclypeus with faint vertical bands. Maxillary palpi greyish, distal segment dark brown. Antennae greyish, both antennae broken. Length of third antennal segment 0.36 mm, of fifth segment 0.28 mm. Lacinia deeply bifurcate apically (Fig. 2 B). Ventral tooth broader and slightly longer than dorsal one. Compound eyes black. IO/D = 1.75, P.O. 0.5. Ocelli colourless.

Thorax sclerites dark brown. Legs greyish brown except fore and middle tarsi, which are dark brown. Tarsal ratio t1/t2 of hind tarsus 3. First tarsal segment with 18 ctenobothria, second segment with none. Length of hind tibia 0.86 mm.

Membrane of wings slightly greyish with light brown pterostigma and a brownish marking at end of analis of both wings (Fig. 2 C). Pterostigma broadening distad. *R* and *M* coalesce for a short distance in fore wing and are united in a point in hind wing. Areola postica distinctly broader than high, higher than the distance from it to *M*. Wings entirely bare. Length of fore wing 2.9 mm, of hind wing 1.6 mm.

Abdomen light greyish with light brownish annulation. Apex dark brown. Ninth tergite with a pair of backwards directed, long and slender apophyses, evidently referred to as »cerci» by NAVAS. Apophyses in lateral view slightly sinuously bent downwards (Fig. 2 G) and in dorsal view slightly but regularly curved outwards (Fig. 2 H). Epiproct with a downwards curved clavate projection. Paraprocts without projections, bearing 10 trichobothria each. Hypandrium (Figs. 2 F.) with a central, backwards directed projection, which apically is bifurcate. Parameres fused together to form a single median sclerite.

The genus *Lachesilla* has a global dis-

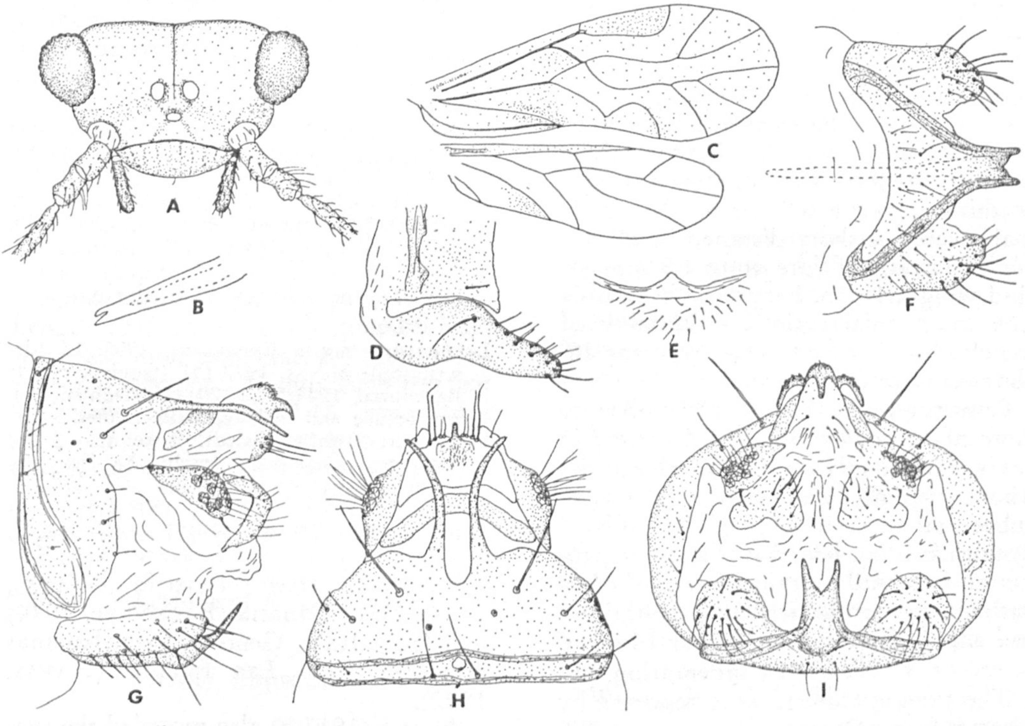

FIG. 2. *Lachesilla gridelli.* A. male head in dorsal view, B. lacinia in lateral view, C. wings, D. female gonapophyses, E. border of female subgenital plate in caudal view, F. male hypandrium in ventral view, G. male terminal abdominal segments in lateral view, H. ditto in dorsal view, I. ditto in caudal view.

tribution, and a considerable number of species are described from different parts of the world. Ten species are recorded from Europe three of which are the badly described Navas' species listed above. *L. bernardi* Badonnel, which is described from France, is known only in the female sex. The present species can be separated from *L. livida* Enderlein, *L. quercus* Kolbe, *L. rossica* Roesler and *L. tanaidana* Roesler by the absence of apophyses on the paraprocts, the presence of long, narrow, backwards directed apophyses on the ninth tergite and the single clavate projection on the epiproct. These characters are found in *L. pedicularia* Linné and *L. greeni* Pearman, from which *L. gridellii* may be separated by the single projection on the hypandrium.

A female specimen from Hierro apparently belongs to this species. In colour it resembles the male, with the exception of slightly paler wings. IO/D = 2.3, P.O. cannot be measured because of the bad state of the head. Only three segments are left of each antenna, length of third segment 0.24 mm. *R* and *M* coalesce for a short distance in all the wings. Length of fore wing 1.8 mm, of hind wing 1.4 mm. Length of hind tibia 0.76 mm, tarsal ratio 2.4. Number of ctenobothria on first tarsal segment 18, none on second segment.

Gonapophyses (Fig. 2 D.) similar to those of *L. pedicularia* and *L. greeni* in havings hairs only on the dorsal margin. About medially there is a strong seta. Subgenital plate in caudal view (Fig. 2 E) with medial, broadly triangular projection but hind margin in ventral view without any projection or indentations, and thus differing from hypandrium of *L. greeni*, which has an indentation.

The type specimens were reported by NAVAS from Genova, on bananas imported from Las Palmas, but in the same paper he reports the species from Padua on *Evonymus japonicus*. Navas' determinations are often wrong and the specimens should be checked.

Present material: Hierro, above Frontera, 100 m, 1966-07-29, 1 ♀, (BMNH); Gomera, above Agullo 300 m, 1966-08-07, 1 ♂ (BMNH).

Family Peripsocidae

Ectopsocus briggsi McLachlan, 1899

Ectopsocus briggsi McLACHLAN, 1899:277, f. 1—4 (description); BADONNEL, 1944:57 (faunistic note).

Ectopsocus parvulus ENDERLEIN, 1929:244 (faunistic and nomenclatorial notes). (non *Peripsocus alboguttatus* var. *parvulus* Kolbe, 1880).

ENDERLEIN recorded this widespread species from Tenerife. BADONNEL remarked that the identity of the recorded specimens should be checked, as they might belong to *E. meridionalis* Ribaga. The present specimens confirm the occurence of *E. briggsi* on the Canary Islands.

Present material: Hierro, above Frontera 1000 m, 1966-07-29, 1 ♀ (BMNH); Hierro, 1960-06-13, 5 ♂♂ 1 ♀ (NRS); Gomera, above Agullo 300 m, 1966-08-07, 8 ♂♂ 9 ♀♀ (BMNH), 3 ♂♂ 3 ♀♀ (MZH); Tenerife, Mercedes, 1960-04-30, 3 ♂♂ 7 ♀♀ 3 juv. (NRS).

Ectopsocus strauchi Enderlein, 1906

Ectopsocus strauchi ENDERLEIN, 1906:315 (description); NAVAS, 1927:151 (faunistic note); BADONNEL, 1944:57, f. 20—22 (faunistic notes, female and male genitalia figured); BADONNEL, 1946:240 (listed). (Type: 1 ♂ 2 ♀♀ syntypes; »Canarische Inseln, La Paz, An Myrte»; deposition unknown.)

Peripsocus opulentus NAVAS, 1908:411, f. 13 (description). (Type: sex?; Tenerife; deposition unknown.)

Recorded from Tenerife (NAVAS, 1908), Gran Canaria (BADONNEL, 1944) and from Italy, Genova, from bananas imported from Las Palmas (NAVAS, 1927).

NAVAS (1917 b) also recorded the species from Spain, but the identification should to be checked.

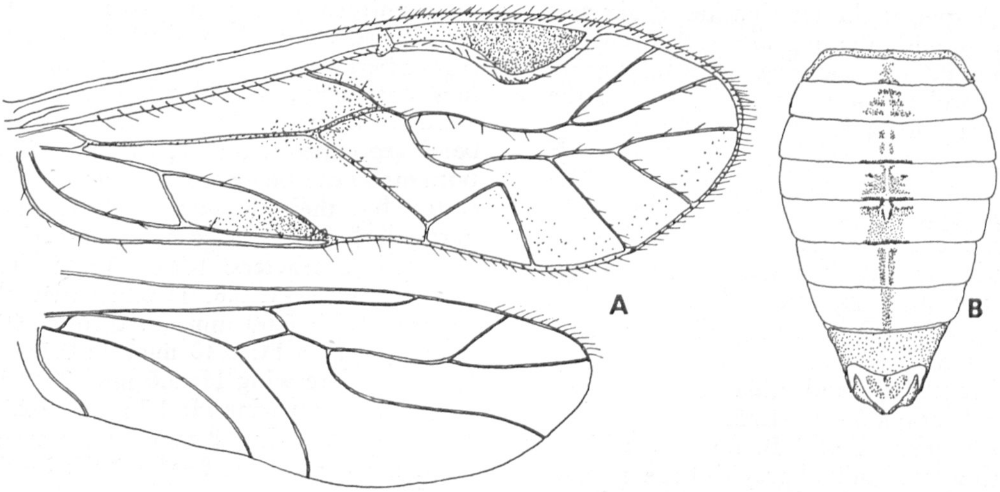

FIG. 3. Male of *Elipsocus fasciatus:* A. wings, B. abdomen in dorsal view.

Present material: Gomera, above Agullo 300 m, 1966-08-07, 1 ♀ (BMNH); Tenerife, Puerto de la Cruz, 1960-07-20, 1 ♀ (NRS).

Peripsocus phaeopterus (Stephens, *1836)*

Psocus phaeopterus STEPHENS, 1836:127 (description).
Peripsocus fortunatus NAVAS, 1916:58, f. 34 (description); BADONNEL, 1944:57 (reference); BADONNEL, 1946:240 (listed). (Type: ♀ lectotype; Tenerife, Laguna; CSZ.) New synonym.

Biometric data of the present male: Length of fore wing 3.0 mm, of hind wing 2.2 mm, antennae 2.6 mm, third antennal segment 0.48 mm, fifth segment 0.30 mm, hind tibia 1.16 mm, tarsal ratio 2.5, number of ctenobothria on first tarsal segment of hind leg 22, IO/D 0.9, P.O. 0.6. Genitalia similar to those of Scandinavian specimens.

Present material: Tenerife, El Pinalete 200 m, 1966-07-13, 1 ♂ (BMNH); Laguna, 1908, Cabrarer, ♀ lectotype of *P. fortunatus* (CSZ).

Family Elipsodicae

Elipsocus fasciatus (Navas, 1908)

Fig. 3.

Cabarer fasciatus NAVAS, 1908:410, f. 12 (description). (Type: ♀ lectotype; Tenerife, Laguna; CSZ.)
Elipsocus fasciatus BADONNEL, 1944:55, f. 16—19 (faunistic notes, rerescription of female); BADONNEL, 1946:240 (listed); MEINANDER, 1966:111 (faunistic note).

A redescription of the female is published by BADONNEL (1944). The present material includes two male specimens. As the male was hitherto unknown. I include drawings of the wings and the abdomen and a short description.

Head generally greyish yellow with brown markings. Frons with a V-shaped marking, the tip of which reaches the frontal ocellus. Vertex brown with a yellowish longitudinal band on each side. Epicranial suture almost black. Compound eyes rather small, IO/D 1.7—1.8 P.O. 0,65—0.8. Maxillary palpi brownish. Antennae 2.4—2.6 mm, third segment 0.50—0.54 mm, fifth segment 0.3 mm. Scape, pedicel and base of third and fourth segment yellowish, the rest of the flagellum brownish.

Wings, Fig. 3 A. Membrane of fore wings almost hyaline except for the pterostigma, which distally is dark brown and basally yellowish white, a rather dark spot at the termination of *Ax* and *An*, greyish shading along the veins in the middle of the wing and a light greyish band extending from the apex of the areola postica along the hind margin of the wing to the wing apex. The areola postica is high and sharply angled. The cross-vein between *Ax* and *An* drawn in the figure is aberrant and does not exsist in the opposite wing, or in the wings of the other specimens. Length of fore wing 2.9—3.0 mm, of hind wing 2.2—2.4 mm.

Length of hind tibia 1.1—1.2 mm, tarsal ratio 4.5—1—1.75.

Abdomen, Fig. 3 B, dorsally whitish with a longitudinal greyish brown band, ventrally greyish brown with a light, rather broad, longitudinal median band.

Recorded from Tenerife and Gran Canaria.

Present material: Tenerife, Mercedes, 1960-04-30, 1 ♂ 2 ♀♀ (MHZ); 1960-05-11, 1 ♀ (NRS); 1960-05-23, 1 ♂ 4 ♀♀ (NRS); Laguna, 1906, ♀ lectotype, 5 ♀♀ (Cabrarer) (CSZ); 1908, 4 ♀♀ Cabrarer (CSZ); 1 ♀, Cabrarer (MZB); 1 ♀ Cabrarer (MNHN).

Elipsocus sp. 1.

There are four specimens of *Elipsocus* which evidently do not belong to *E. fascinatus*. Owing to the lack of distinctive morphological features, the species of *Elipsocus* are rather difficult to characterize, particurarly when only a few specimens are available and I do not wish to name any new species on the basis of this small material.

Three specimens are male. Fore wings hyaline except for pterostigma, an area behind the hind angle of the pterostigma and the apex of the area between *Ax* and *An*, which are yellowish grey. Vertex light brown with a longitudinal whitish band on each side about as far from the compound eyes as from the epicranical suture. Epicranial suture black. Frons whitish with a dark brownish triangle below the ocelli. Antennae almost uniformly greyish brown. Abdomen dorsally entirely whitish (specimen from Hierro = H) or with dark markings anteriorly, which continue backwards in a narrow longitudinal median band (specimen from Tenerife = T). Both males can be separated from *E. fasciatus* by their biometric characters, particularly by the large compound eyes. Biometric characters: IO/D H: 0.9, T: 1.0—1.2; P.O. H: 0.8, T: 0.9; antennal segment 3 H: 0.60 mm, T: 0.56—0.60 mm; segment 5 H: 0.40 mm, T: 0.33—0.36 mm; fore wing H: 3.6 mm, T: 3.5—3.7 mm; hind wing H: 2.7 mm, T: 2.7 mm; hind tibia H: 1.2 mm, T: 1.2 mm; Hind tarsal ratio H: 8—1—2, T: 6—1—1.5.

Present material: Hierro, 1960-06-13, 1 ♂ 1 ♀ (NRS); Tenerife, Mercedes, 1960-05-27, 1 ♂ (NRS); Laguna, 1908, 1 ♂, Cabrarer (CSZ).

Family Trichopsocidae

Trichopsocus acuminatus Badonnel 1943

Trichopsocus acuminatus BADONNEL, 1943:89, f. 213—124, 220 (description); BADONNEL, 1944:56 (faunistic note); BADONNEL, 1946: 240 (listed).

Recorded from Gran Canaria by BADONNEL. The specimens recorded by Mc LACHLAN (1883) as *Caecilius dalii* from Gran Canaria most probably belong to this species.

Present material: Hierro, above Frontera 1000 m, 1966-07-29, 2 ♀♀ (BMNH); Gomera, above Agullo 300 m, 1966-08-07, 11 ♂ 17 ♀♀ (BMNH); 5 ♂♂ 6 ♀♀ (MZH).

(?) *Trichopsocus dalii* (McLachlan, 1867)

Caecilius dalii MCLACHLAN,1882:155, 175 (faunistic note); BRAUER, 1900:467 (listed); NAVAS, 1906:704 (listed).

Trichopsocus dalii BADONNEL, 1944:56 (references); BADONNEL, 1946:240 (listed).

MCLACHLAN's record from Gran Canaria is most probably based on specimens of *T. acuminatus* and the determination should be checked.

Family Mesopsocidae

Mesopsocus canariensis Meinander, sp. n.

Fig. 4.

(?) *Mesopsocus unipunctatus* Navas, 1906:704 faunistic record); Badonnel, 1944:56 (references); Badonnel, 1946:240 (listed). (non *Hemerobius unipunctatus* Müller, 1764.)

The specimens are preserved in alcohol and it seems that the colour has partly faded.

Head (Fig. 4 B.) greyish yellow with brownish grey markings. Postclypeus with 16 dark bands. On frons two V-shaped markings, the ventral one being smaller and more distinct than the dorsal one. Dorsad of inner margin of antennal sockets on each side a small blackish dot. Genae unicolours, pale. Ocellular tubercles dark blackish brown. Epicranial suture distinct, bordered by dark margins. Eyes bordered by double rows of rather pale brown margins. Dorsally on vertex 2—3 transverse rows of dark more or less round markings. Eyes apparently blackish. IO/D 2.25—2.40, P.O. 0.7—0.8. Maxillary palpi light except for the last segment, which is brown.

Antennae 5.6—6.1 mm, distinctly longer than fore wings. Scape and pedicel pale except for proximal and distal margins. Flagellum blackish. Hairs of basal flagellar segments shorter than width of segments, hairs of distal segments shorter than width of segments. Length of third segment 0.85—0.95 mm.

Thorax yellowish grey with brownish markings distributed as in *M. dromedarius* Ball.

Wings (Fig. 4A) almost hyaline except for the pterostigma of fore wings, which is dark greyish brown. In fore wing *Rs* and *M* are fused for a short distance. Length of fore wing 3.9—4.0 mm, of hind wing 3.1—3.2 mm.

Femora pale with greyish markings, tibiae pale except for the distal parts, which are brownish, tarsi brownish. Length of hind tibiae 1.2—1.3 mm, of first tarsal segment 0.35 mm, second segment 0.11 mm, third segment 0.14 mm. First tarsal segment with 19, second segment with 3 ctenobothria, third with none.

Abdomen ventrally pale, laterally greyish brown and dorsally pale with some small greyish brown markings. Phallic frame broad, aedeagal arch smoothly rounded, not forming any angle distally. Parameral lobes distally rather broad and hardly bilobed, reaching backwards as far as aedeagal arch (Fig. 4 D).

M. canariensis is most closely related to *M. dromedarius*, which is recorded from Morocco. They share the broad phallic frame with the smoothly rounded aedeagal arch and the shape of the head with rather small eyes. *M. cana-*

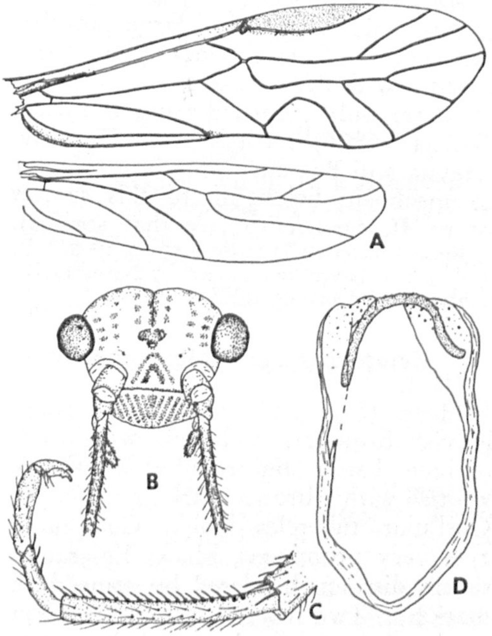

Fig. 4. Male of *Mesopsocus canariensis*. A. wings, B. head in frontal view, C. hind tarsus, D. phallosome.

riensis is separated by the absence of the hump on the fourth abdominal tergite, the two V-shaped markings on the frons, the completely dark flagellum and the coalescence of *Rs-M*.

As BADONNEL (1944) has already pointed out, NAVAS' (1906) determination of specimens from Tenerife, Laguna and Barranco Hondo as *M. unipunctatus* is obviously wrong. It is very probable that the specimens are conspecific with *M. canariensis* or *M. laterimaculatus,* which are recorded from the same island.

Present material: Tenerife, Mercedes, 1960—05—23, ♂ holotype, 1 ♂ (NRS).

Mesopsocus laterimaculatus Ball, 1937

Mesopsocus laterimaculatus BALL, 1937:5, f. b, pl. II:1, V:2 (description).

(?) *Mesopsocus unipunctatus* NAVAS, 1906:704 (faunistic record); BADONNEL, 1944:56 (references); BADONNEL, 1946:240 (listed). (non *Hemerobius unipunctatus* Müller, 1764.)

The male larvae have large protuberant eyes and thus evidently not conspecific with *M. canariensis.*

So far only recorded from Morocco. NAVAS' (1906) records from Tenerife, Laguna and Barranco Hondo may refer to specimens belonging to this species or to *M. canariensis* (see that species).

Present material: Tenerife, Laguna, 1908, 1 ♀, 3 ♂♂ 1 ♀ larvae, determined by Navas as *Perientomum fortunatum* (CSZ).

Mesopsocus wardi Meinander, sp.n.

Fig. 5.

Head (Fig. 5 C) frontally mottled greyish brown. Postclypeus with eight oblique bands on each side. Genae whitish with a brown marking medially. Ocellular tubercles black. Compound eyes very prominent, black. Epicranial suture distinct, bordered by some dark markings. Two rows of similar markings border the compound eyes on the vertex and there is also a row of such markings along the hind margin. Vertex between these markings rather light. IO/D 1.75, P.O. 0.75. Maxillary palpi light, almost whitish, except for the last segment, which is brown.

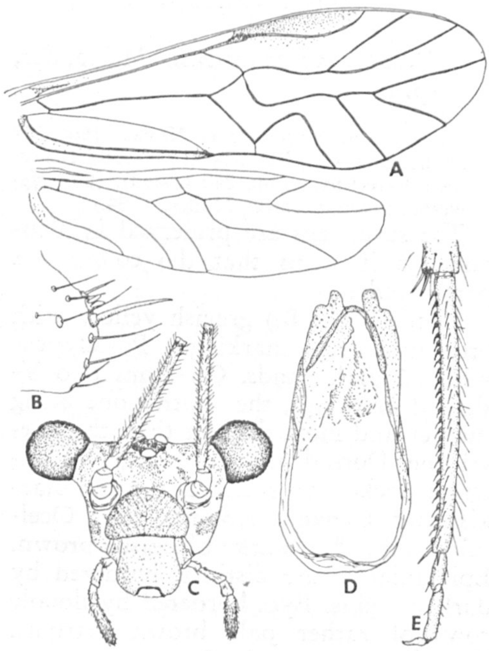

FIG. 5. Male of *Mesopsocus wardi*. A. wings, B. apex of paraproct in lateral view, C. Head in frontal view, D. phallosome, E. hind tarsus.

Antennae 4.1 mm, about as long as fore wing. Scape and pedicel pale, flagellar segments greyish brown. Hairs of basal flagellar segments shorter than width of segments. Length of third segment 0.68 mm, of fifth segment 0.61 mm.

Thorax brownish, sclerites narrowly bordered by yellowish brown.

Wings (Fig. 5 A) almost hyaline except for the pterostigma of fore wing, which is dark greyish brown. In fore wing *Rs* and *M* are united in a point. Length of fore wing 4.3 mm, of hind wing 3.6 mm.

Femora pale with greyish markings, tibiae proximally greyish, distally greyish brown, tarsi greyish brown. Length of hind tibia 2.00 mm, of first tarsal segment 0.57 mm, second segment 0.07 mm, third segment 0.11 mm. First tarsal segment with 25 ctenidobothria, second segment with one and third segment with none.

Abdomen dorsally and laterally dark brown, ventrally pale. On apex of paraprocts (Fig. 5 B) two small tubercles very close to each other between two long setae, the ventral seta being about twice as long as the dorsal one. Aedeagal arch distally rather sharply bent. Parameral lobes distally bilobed, the inner lobe being prominent and the outer very short, reaching backwards about as far as aedeagal arch (Fig. 5 D).

Eleven species of *Mesopsocus* are recorded from Europe and North Africa. Four of them, *M. duboscqui* Badonnel (S. France), *M. laterimaculatus* Ball (Morocco and Tenerife), *M. nasatus* Enderlein (Tunisia) and *M. ypsilon* Ball (Morocco), are known only in the female sex. The original descriptions of the African species (ENDERLEIN 1907, BALL 1937) include drawnings of the marknings of the head and it should thus be possible to separate them from *M. wardi*. *M. dromedarius* Ball (Morocco), *M. immunis* Stephens (Europe and Morocco) and *M. unipunctatus* Müller (Europe, Japan and North America) can be separated from the present species by their much broader aedeagal arch and rather deep incision distally in the parameral lobe; *M. dromedarius* is also distinguished by its small compound eyes and the hump of the fourth abdominal tergite. The remaining species. *M. atlasicus* Badonnel (Morocco), *M. fuscifrons* Meinander (Morocco), *M. laticeps* Kolbe (Europe, North America) and *M. maroccanus* Badonnel (Morocco), resemble *M. wardi* in the structure of the parameral lobes, which distally have a lingulate projection. The aedeagal arch is distally rather sharply bent in *M. atlasicus* and *M. maroccanus*, and thus serves to separate them from the other three species of the group. *M. laticeps* is distinguished by the large black markings on the frons, like *M. wardi*, it has two small tubercles between two long setae (BADONNEL 1943:69), on the apex of the paraprocts but its dorsal spine is about as long as the ventral one. *M. atlasicus* has a short bifid spine between the setae, which is apparently homologuous with the pair of tubercles in *M. laticeps* and *M. wardi*. *M. fuscifrons* can be separated from *M. wardi* by its long flagellar hairs, which are more than twice the width of the flagellar segments.

Present material: Gomera, above Agullo 300 m, 1966-08-07, ♂ holotype, (BMNH).

Family Psocidae

Amphigerontia contaminata (Stephens, 1836)

Psocus contaminatus STEPHENS, 1836:120 (description).
Amphigerontia contaminata MEINANDER, 1966: 120 (faunistic note).
Amphigerontia bifasciata (Latreille) ROESLER, 1943:12 (synonymy).

The species, which is widespread in Europe, is recorded by me (1966) from Tenerife and Lanzarote.

Present material: Tenerife, Icod de Los Vinos, 150 m, 1966-07-12, 1 ♂ (BMNH); Bailaderos, 1960-05-16, 1 ♀ (NRS).

Atlantopsocus adustus (Hagen, 1865)

Psocus adustus HAGEN, 1865:10 (description); MCLACHLAN, 1882:155, 174 (faunistic notes). (Type: Madeira; BMNH.)
Atlantopsocus adustus BADONNEL, 1944:48, 60 references); BADONNEL, 1946:240 (listed); MEINANDER, 1966:115, f. 27—30, 35 (redescription, faunistic notes).

The species is separated from *A. personatus* by the divergence ventrad of the subparallel rows of denticulate projections on the hypandrium. Hitherto it has been recorded only from Medeira. A closely related species, *A. chopardi* Badonnel, is recorded from the Azores, and is probably conspecific, but more material is needed before it is possible to settle this question. The present specimen is smaller than the Madeiran specimens, the biometric data of the Canarian specimen and of 2 ♂♂ and 4 ♀♀ from Madeira mentioned in Meinander 1966 are compared in Table 1.

Presented material: Tenerife, Puerto de la Cruz, 1960-04-18, 1 ♂ (NRS).

Table 1. Biometric data of *Atlantopsocus adustus*

	Canarian ♂	Madeiran ♂♂	Madeiran ♀♀
Dentiform projections in one row on hvpandrium	12	12—13	—
IO/D	0.93	1	2
P.O.	0.67	0.78	0.70—0.86
Fore wing (mm)	4.2	4.8—5.1	4.4 —5.0
Hind wing (mm)	3.2	3.6—3.8	3.2 —3.5
Hind tibia (mm)	1.5	2.1	1.8 —2.0
Tarsal ratio	2.8	3.6	2.8 —3.1

Atlantopsocus personatus (Hagen, 1865)

The species is divided into seven subspecies, of which the four mentioned below occur on the Canary Islands, *A. p. personatus* on Madeira, *A. p. berlandi* Badonnel in Morocco and *A. p. hibernicus* Fahy in Ireland. The subspecies can be separated from each other by their biometric values, as is seen in Table 2, the values of which are based on all the specimens investigated by me during the preparation of the present paper and my paper of 1966, and on the data given by Badonnel 1944 and Fahy 1968.

However, still more material must be investigated before it can be ascertained whether the subdivision into subspecies, particularly the separation of the populations on the different Canarian islands, is justified.

Atlantopsocus. p. hierroensis Meinander, ssp. n.

Fig. 6.

The present material of *A. personatus* from Hierro, from which the species was not earlier recorded, differs from the other populations of the species in certain biometric characters, which suggests the presence of a distinct subspecies on the island. The holotype has 10

Table 2. Some biometric values of the subspecies of *Atlantopsocus personatus*

	hibern.	pers.	hier.	leucophl.	lesnei	lanz.	berlandi
	5 ♂♂ 5♀♀	8 ♂♂ 3 ♀♀	5 ♂♂ 7 ♀♀	7♂♂ 9 ♀♀	2 ♂ 3 ♀	2 ♀♀	1 ♂
Dentif. proj. in one row	13—14	12	9—10	6—10	9	—	10—11
IO/D (♂)	0.9—1.3	1.2—1.4	0.9—1.1	0.7—0.9	0.9—1.0	—	1.5
P. O. (♂)	?	0.5—0.8	0.7—0.8	0.8—0.9	1.0	—	1.0
Fore wing (mm, ♂)	3.7—4.2	2.8—3.2	3.9—4.3	3.2—3.7	3.2—3.6	—	3.5
Hind wing (mm, ♂)	2.7—3.0	2.3—2.5	2.9—3.2	2.2—3.0	2.4	—	2.6
Hind tibia (mm, ♂)	1.6—1.8	1.2—1.4	1.4—1.6	1.2—1.5	1.2	—	1.4
Tarsal ratio (♂)	3.4—4.1	3.0—3.3	2.4—2.6	2.4—3.2	2.5	—	2.5
IO/D (♀)	1.9—2.5	2.2	1.8—2.2	1.7—2.1	1.9—2.0	2.3	—
P.O. (♀)	?	0.8	0.5—0.7	0.5—0.7	0.7	?	—
Fore wing (mm, ♀)	3.5—3.6	3.2	3.0—3.5	3.2—3.8	3.2—3.3	2.7	—
Hind wing (mm, ♀)	2.7—3.0	2.5	2.2—2.6	2.3—2.8	2.4—2.5	2.2	—
Hind tibia (mm, ♀)	1.5—1.7	1.3	1.1—1.4	1.1—1.3	1.2—1.4	1.1	—
Tarsal ratio (♀)	2.9—3.2	2.9	1.9—2.2	2.1—3.3	2.1—2.3	2.3	—

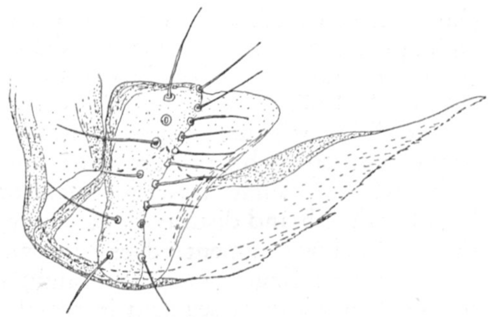

FIG. 6. Female of *Atlantopsocus personatus hierroensis* gonaphophyses.

dentiform projections on the left side of the through of the hypandrium and 9 on the right side. In the male paratypes the number varies between 9 and 10, being the same on the two sides. It is thus about the same as in *A. p. lesnei*, *A. p. leucophlebius* and *A. p. berlandi*. The males are distinguished from all these subspecies by their much longer wings and slightly longer hind tarsi, whereas no such differences are apparent in the females, the gonapophyses (Fig. 6.) of which also resemble those of the other Canarian subspecies.

Present material: Hierro, 1960-06-13, ♂ holotype 1 ♂ 5 ♀♀ (NRS); above Frontera, 1000 m, 1966-07-29, 3 ♂♂ 2 ♀♀ (BMNH).

Atlantopsocus p. lanzarote Meinander, 1966

Atlantopsocus p. lanzarote MEINANDER, 1966: 118, f. 34 (description). (Type: ♀ holotype; Lanzarote; MZH.)

Two females recorded from Lanzarote.

Atlantopsocus p. lesnei (Badonnel 1944)

Atlantopsocus lesnei BADONNEL, 1944:49, 59, f. 10, 14—15 (description); BADONNEL, 1946: 240 (listed). (Type: ♀ holotype; Gran Canaria; MNHN?)

Atlantopsocus p. lesnei MEINANDER, 1966:118, f. 24—26 (faunistic note).

(?) *Psocus personatus* Hagen. MCLACHLAN, 1882:155, 174 (faunistic notes); BRAUER, 1900:467 (listed); NAVAS, 1906:703 (listed).

(?) *Atlantopsocus personatus* BADONNEL, 1944: 58 (references, taxonomy).

Recorded from Gran Canaria.

Present material: Gran Canaria, 1880-12-06, 1 ♂ 2 ♀♀, Eaton (BMNH).

Atlantopsocus p. leucophlebius (Navas, 1916)

Amphigerontia leucophlebius NAVAS, 1916:57 (description). (Type: ♂ lectotype by present designation; Tenerife; CSZ.)

Atlantopsocus leucophlebius BADONNEL, 1944: 48, 59 (references); BADONNEL, 1946:240 (listed).

Atlantopsocus p. leucophlebius MEINANDER, 1966:117, f. 17, 21—23, 32—33 (redescription, faunistic note).

(?) *Psocus personatus* Hagen. MCLACHLAN, 1882:155, 174 (faunistic notes); NAVAS, 1906: 703 (listed).

(?) *Atlantopsocus personatus* BADONNEL, 1944: 58 (references, taxonomy).

The subspecies was originally recorded from Tenerife but the population from La Palma is included in this subspecies here. Only one difference was noted between the populations of the two islands: the tarsal ratio of the hind leg of the female is 2.1—2.6 on Tenerife, and 2.6—3.3 on La Palma but this difference may be disproved when more material is available.

Present material: La Palma, La Cumbrecita, 400—600 m, 1966-08-10, 3, ♂♂ 1 ♀ (BMNH); Los Titos, 250 m, 1966-07-23, 1 ♀ (BMNH); Tenerife, Vilaflor, 1960-05-10, 1 ♀ (NRS); Médano, 1909-12-17, ♂ lectotype (CSZ); Agua Mansa, 1100 m, 1966-07-05, from Pines, 1 ♂ 3 ♀♀ (BMNH); 2 ♀ (MZH); La Esperanza, 1911-11-10, 3 ♀♀, A. Cabrera (CSZ); Tenerife, 1880-12-16, Eaton (BMNH).

Atlantopsocus triangularis Meinander, sp. n.

Fig. 7.

Vertex light greyish. Behind the ocelli is a short transverse white line, from the ends of which oblique white lines extend over the vertex in the direction of the hind angles but curve on top of the vertex towards the compound eyes. Behind this V-like marking run backwards two narrow white lines from the compound eyes. Compound eyes blackish, The dorsal third of the frons is dark brown, so that the light head bears a dark transverse line connecting the ventral margins of the compound eyes. Ocelli black. Ventral part of frons whitish with two oblique greyish lines proceeding ventrad from the unpaired ocellus. Postclypeus greyish with indistinct brown vertical bands. Dorsal half of anteclypeus dark brown, ventral half whitish. Labrum dark brown. Genae whitish. Maxillary palpi whitish, except for the distal segment, which is chocolate-coloured. Laciniae broad and ending squarely, on inner margin slightly before apex a rather broad tooth. IO/D ♂: 1.67, ♀: 1.86—1.92. Antennae of all investigated specimens broken. Scape and pedicel basally brownish, distally whitish. First flagellar segment basally whitish and distally dark brown, the following segment dark brown. Hairs of first flagellar segment slightly longer then width of segment in females and about twice as long as width of segment in males.

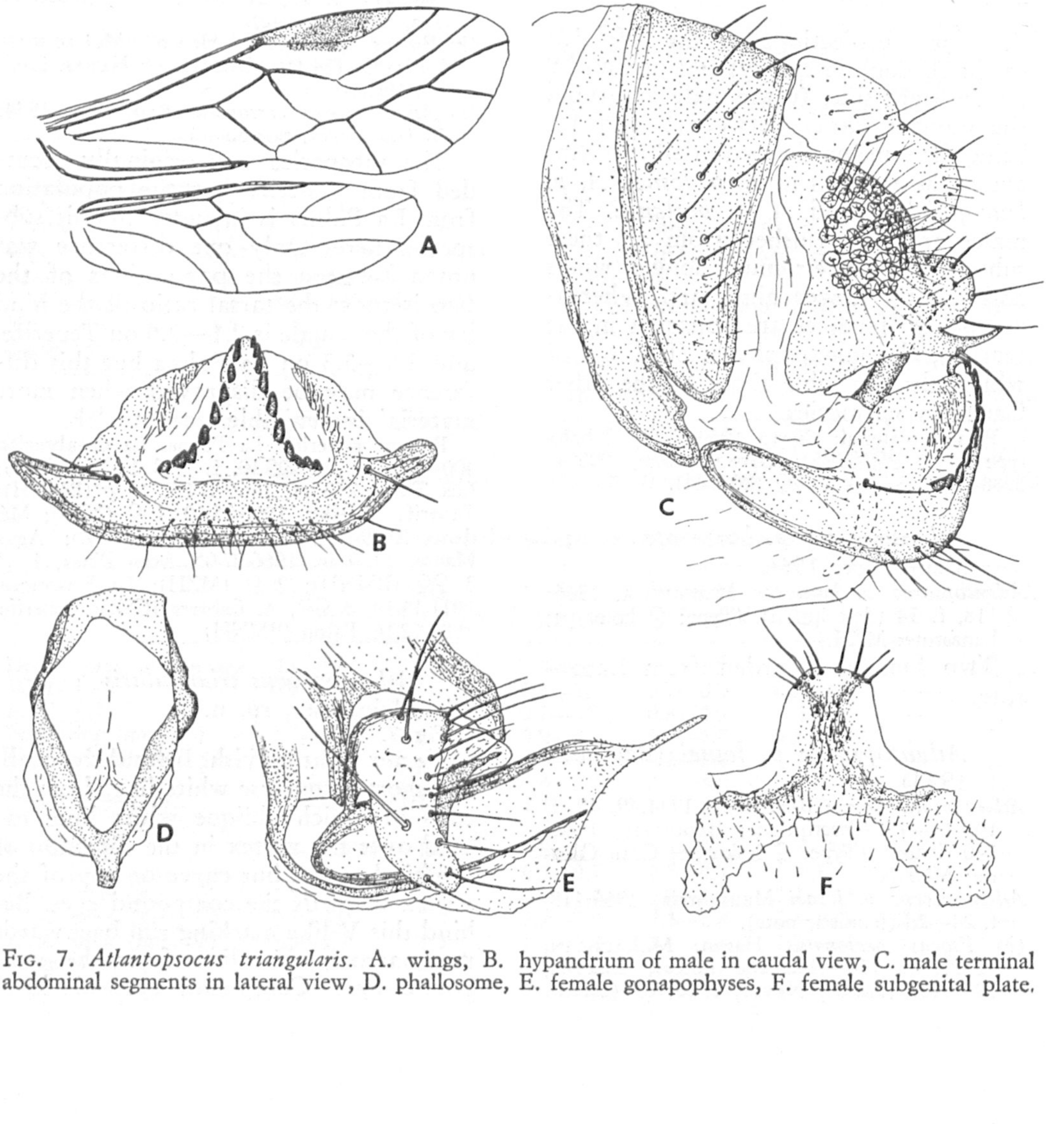

Fig. 7. *Atlantopsocus triangularis*. A. wings, B. hypandrium of male in caudal view, C. male terminal abdominal segments in lateral view, D. phallosome, E. female gonapophyses, F. female subgenital plate.

Pronotum greyish brown with dark brown suturas. Antedorsum of mesonotum dark brown on the anterior vertical part, greyish on the posterior horizontal part. Dorsum anteriorly greyish, medially greyish brown, posteriorly with an oblique broad white band extending from the alar processes to the anterior angles of the scutellum. Scutellum light greyish. Antedorsum of metanotum whitish, dorsum and scutellum like mesonotum. Lateral parts of thorax dark brown. Proximal parts of coxae dark brown, distal parts of coxae as well as the legs whitish, except for tips of tibiae and tarsi, which are dark brown. Length of hind tibia ♂: 1.46 mm, ♀: 1.62—1.80 mm. Tarsal ratio 3.5—3.6.

Wings, Fig. 7 A. Membrane of fore wing light greyish, of hind wing hyaline. Length of fore wing ♂: 3.6 mm, ♀: 4.0—4.4 mm, of hind wing ♂: 2.6 mm, ♀: 2.8—3.1 mm.

Abdomen whitish with irregular dark brown lateral bands, which anteriorly dorsally are connected by narrow transverse bands along the anterior margins of the second and third segments. Dorsally is a dark brown longitudinal median band, which broadens backwards.

Male genitalia, Figs. 7 B—D. Hypandrium bilaterally symmetrical. Central part weakly sclerotized, triangular, with a broadening base. Left side bears 9 and right side 10 denticulate projections. In the other described species, the central part is well sclerotized and troughshaped bordered with subparallel rows of denticulate projections. Phallic frame ventrally broadly fused. Paraprocts with a strong clavate ventral projection.

Female genitalia, Figs. 7 E—F. The dorsal valvae medially very wide. Bristles on external valvae almost at the posterior margin. Subgenital plate distinct.

Last instar larvae with head and abdomen coloured as in the adults, thorax almost uniformly greyish. Antennae slightly shorter than the body.

A. triangularis can easily be separated from *A. adustus*, *A. chopardi* and *A. personatus* by the head colour; in those three species the head in distinctly marked with spots and the postclypeus has very well-defined bands.

Present material: Gomera, above Agullo 300 m, 1966-08-07, ♂ holotype, 4 ♀♀, 2 larvae (BMNH).

(?) *Psococerastis gibbosa* (Sulzer, 1776)

Psocus longicornis Navas, 1906:703 (faunistic note).

Psococerastis gibbosus Badonnel,1944:58 (identification doubted); Badonnel, 1946:240 (listed).

The species is common in Europe and its occurence on the Canary Islands is not impossible, but Navas' record from Tenerife should be confirmed. Perhaps Navas had a specimen of *Atlantopsocus*, which resembles *P. gibbosa.*

(?) *Trichadenotecnum variegatum* (Latreille, 1799)

Amphigerontia variegata Fabr. (sic!) Navas, 1906:704 (faunistic note).

Loensia variegata Badonnel, 1944:58 (identification doubted); Badonnel, 1946:240 (listed).

The identity of the specimen reported by Navas from Tenerife cannot be ascertained until the specimen is found.

Family Myopsocidae

Rhaptoneura eatoni (McLachlan, 1880)

Myopsocus eatoni McLachlan, 1880:103 (description).

Rhaptoneura eatoni Badonnel, 1944:58 (faunistic note); Badonnel, 1944:240 (listed).

Badonnel (1944) recorded the species from Gran Canaria, the present material includes records from three additional islands.

Present material: La Palma, La Cumbrecita, 400—600 m, 1966-08-10, 1 ♀ (BMNH); Gomera, above Agullo 300 m, 1966-08-07, 2 ♀♀

(BMNH); Tenerife, Icod de Los Vinos 150 m, 1966-07-12, 7 ♂♂ 1 ♀ (BMNH), 3 ♂♂ (MZH); Mercedes, 1960-05-23, 1 ♂ (NRS); Laguna, 1906, 3 exx, Cabrarer (CSZ); 1908, 4 exx, Cabrarer (CSZ); Bajamar, 1907-05-20, 1 ex (CSZ).

References

Badonnel, A. 1943: Psocoptères. — Faune de France 42:1—164.

—»— 1944: Contribution à l'étude des Psocoptères de l'Atlantides. — Rev. Française Entomol. 11:47—60.

—»— 1946: Les Psoques des Iles Atlantides. — Mém. Soc. Biogéografie 8:239—243.

—»— 1955: Psocoptères de l'Angola. — Publ. culturais Companhia Diamantes Angola 26:1—267.

Ball, A. 1937: Contribution à l'étude des Psocoptères I(1). Description de trois espèces nouvelles de Mesopsocus du Maroc. — Bull. Mus. R. Hist. Nat. Belgique 13(42):1—11.

Broadhead, E. 1949: On the identity of the psocid Cuixa canaria Navás. — Entomol. monthly Mag. 85:80.

Enderlein, G. 1905: Morphologie, Systematik und Biologie der Atropiden und Troctiden, sowie Zusammenstellung aller bisher bekannten recenten und fossilen Formen. — Results Swedish Zool. Exped. Egypt & White Nile, 1901 18:1—58.

—»— 1906: Zehn neue aussereuropäische Copeognathen. — Stettiner Entomol. Zeitung 67:306—316.

—»— 1907: Eine neue Copeognathe aus Süd-Tunis. — Ann. Mus. Nat. Hungarici 5: 428—429.

—»— 1910: Neue aussereuropäische Copeognathen. — Zool. Anz. 36:161—169.

—»— 1929: Entomologica Canaria II. — Zool. Anz. 84:221—234.

Fahy, E. D. 1968: A new subspecies of Atlantopsocus personatus (Psocoptera) from Southern Ireland. — Entomol. monthly Mag. 103:205—207.

Hagen, H. 1865: The Neuroptera of Madeira. — Entomol. monthly Mag. 2:8—11, 25—28, 59—62, 75—81.

Heyden, G. H. 1850: Zwei neue deutsche Neuropteren-Gattungen. — Stettiner Entomol. Zeitung 11:83—85.

Linné, C. 1758: Systema Naturae per regna tria naturae secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio decima reformata. Holmiae.

—»— 1768: Systema naturae etc. Editio XII. Vol. III. Holmiae.

McLachlan, R. 1867: A monograph of the British Psocidae. — Entomol. monthly Mag. 3:177—181, 194—197, 226—231, 241—245, 270—276.

—»— 1880: Notes on entomology in Portugal II. Pseudoneuroptera (in part) and Neuroptera-Planipennia. — Entomol. monthly Mag. 17:103—108.

—»— 1882: The Neuroptera of Madeira and the Canary Islands. — J. Linn. Soc. (Zool.) 16:149—183.

—»— 1899: Ectopsocus briggsi, a new genus and species of Psocidae found in England. — Entomol. monthly Mag. 35:277—278.

Meinander, M. 1966: Psocoptera from the Mid-Atlantic Islands and Morocco. — Notulae Entomol. 46:107—121.

Navas, L. 1906: Catálogo descriptivo de Insectos Neurópteros de las Islas Canarias. — Rev. Real Acad. Ciencias Madrid 4: 687—706.

—»— 1908: Neurópteros nuevos. — Mem. Real Acad. Ciencias Artes Barcelona 6:401—423.

— — 1913: Sócidos (Ins. Neur.) de España, nuevos. — Rev. Real Acad. Ciencias Madrid 12:329—335.

—»— 1916: Neuroptera nova Africana. — Mem. Pontificia Accad. Sci. Nuovi Lincei (2)2: 51—58.

—»— 1917a: Insecta nova II Series. — Mem. Pontificia Accad. Sci. Nuovi Lincei (2)3: 13—22.

—»— 1917b: Neurópteros nuevos o poco conocidos (Octavo serie). — Mem. Real Acad Barcelona 13:155—178.

—»— 1921: Socópteros nuevos. — Bol. Soc. Entomol. España 4:90—94.

—»— 1927: Isetti raccolti nel Porto di Genova sulle banane delle Canarie. — Boll. Soc. Entomol. Italiana 59:150—152.

Pearman, J. V. 1932: A new species of Tapinella (Psocoptera). — Stylops 1:240—242.

—»— 1935: Two remarcable Amphientomids (Psocoptera). — Stylops 4:134—137.

Roesler, R. 1943: Über einige Copeognathengenera. — Stettiner Entomol. Zeitung 105:117—166.

Smithers, C. N. 1967: A catalogue of the Psocoptera of the world. — Australian Zool. 14:1—145.

Stephens, F. 1836: Illustrations of British Entomology, or synopsis of indigenous insects etc. 6. London.

Notulae Entomologicae LIII: 159—166, 1973

Coleoptera from North-East Africa. Chrysomelidae: Eumolpinae

(Zoological contribution from the Finnish expeditions to the Sudan No. 34)

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B. J. Selman

Abstract

A list is given of finds of 56 species of Eumolpinae, collected by the Finnish zoological expeditions to the Sudan and Ethiopia. One new species is described: *Syagrus silverbergi* sp. n.

The eumolpid beetles in this paper were collected by the Finnish expeditions to the Sudan, Ethiopia, Somalia and Aden in 1961—63. They comprise 299 Eumolpinae of 56 species and 22 genera all collected by Dr. R. Linnavuori except where stated. Most of the species were collected in the Equatoria Province of the southern Sudan along the border with the Republic of the Congo. This is a region of hilly savannahs and guinean type rain forest bordering onto the Garamba National Park of the Congo, whose eumolpid fauna has already been described (SELMAN 1972). The two faunas naturally have many species in common. The nomenclature follows that of SELMAN (1965). The material is deposited in the Entomological Department of the Zoological Museum, Helsingfors except for 4 paratypes in the British Museum (Nat. Hist.), London. The author is indebted to Dr. H. Silfverberg for allowing him to work on this very interesting collection.

Tribe Nodini

Genus *Pagria*

The specimens collected by this expedition in Ethiopia and the Sudan, fill part of the gap in the previously known distribution of the genus. This was central and eastern Africa as far north as Kenya, and India to Japan.

Pagria liturata Lefevrea

Ethiopia: Belleta forest, 13—14.6.1963, 1 Ex. Sudan: Equatoria, Yambio, 18—25.4.1963, 1 Ex.

Distribution: Angola, Congo (Garamba and Upemba National Parks). Usually found March-July in herbaceous savannah or woody savannah, and July-December in swamps and marshes often at the bases of the plants. Hosts, *Vitex doniana* and *Sporobolus pyramidalis.*

Pagria suturalis Lefevrea

Sudan: Equatoria, Nimule, 11—13.3.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 4 Ex.; Equatoria Loka forest, 8—10.4.1963, 1 Ex.; Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.; Equatoria, Imatong Mts. nr. Gilo, 18—24.3.1963, I Ex.

Distribution: E. Africa including Kenya and Tanzania, Congo (Garamba and Upemba National Parks), Uganda (Ruwenzori 2850 ft.). Found in swamps and dense moist gallery forest. Host, *Erythrophlaeum guineensis.*

Pagria varians Lefevrea

Sudan: Equatoria, Yambio, 18—25.4.1963, 1 Ex.; Equatoria, Lotti Forest, 14—17.3.1963, 1 Ex.

Distribution: East Africa (Kenya, Tanzania), Congo (Garamba and Upemba National Parks). Found October to December and March to May in gallery forest on river banks and in woody savannah. May to September found mainly on herbaceous savannah in the shade. Host *Combretum* spp.

Microeurydemus africanus (Jacoby)

W. Aden Prot.: nr. Lahej, 9—15.7.63 (at light), 1 Ex.

Eritrea: Tesserei, 22.5.1963. 1 Ex.

Sudan: Equatoria, Kapoeta-Boma, 26—27.3. 1963, 29 Ex.

Distribution: Central Africa and the Congo.

Afroeurydemus geniculatus (Jacoby)

Sudan: Blue Nile, Singa-Damazin, 15—17.11. 1962, 2 Ex.; Upper Nile, Malakal, 5—20. 1.1963, 4 Ex.; Equatoria Kapoeta-Boma, 26—27.3.1963, 1 Ex.; Kordofan, El Obeid, 29.1.1963 (at light), 1 Ex.; Blue Nile, Umm Banein, 14.11.1952. 3 Ex.; Blue Nile, Abu Hashim-Galegu, 23—24. 11.1962, 1 Ex.; Blue Nile, Wad Medani, 11—14, 11.1962, 1 Ex.

Distribution: Mozambique.

Afroeurydemus puncticollis (Bryant)

Ethiopia: nr. Nazareth, 20—21.6.63, 1 Ex.

Distribution: Congo (Garamba and Upemba National Parks). Usually found in dense shade on the edge of dense forest.

Afroeurydemus rufulus (Thomson)

Sudan: Equatoria, Imatong Mts., nr. Gilo, 18—24.3. 1963, 1 Ex.; Equatoria: Juba, 27.2. 1963, 1 Ex.

Distribution: Rio Muni.

Afroeurydemus sp.

Somalia: Daragodleh, 25.6.1963, 1 Ex.

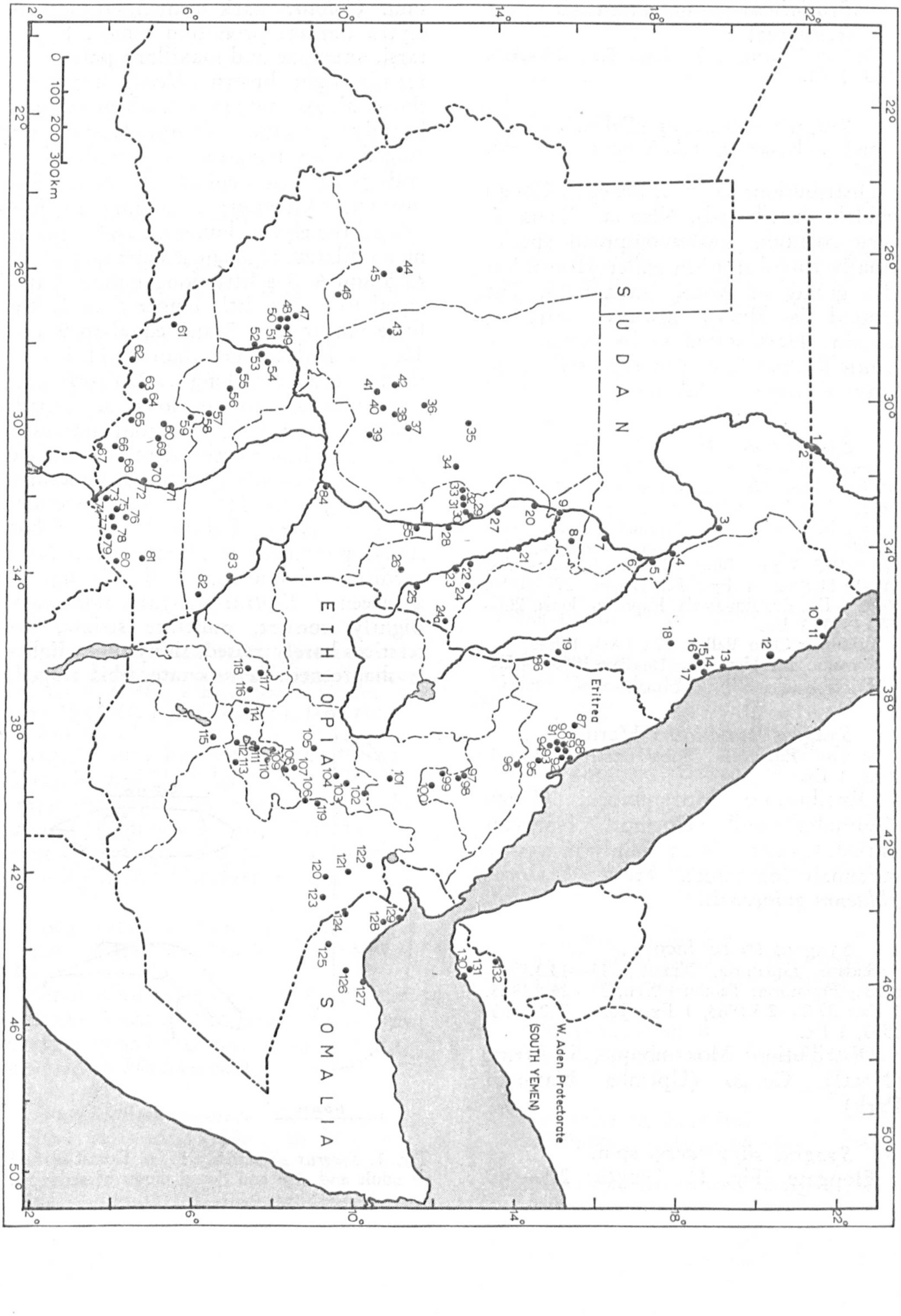
Microsyagrus mashonianus (Jacoby)

Ethiopia: nr. Lake Langanno, 6.6.1963, 4 Ex.; Agheresalam, 7.6.1963, 2 Ex.; nr. Nazareth, 20—21.6.63, 3 Ex.; Omo Valley, 12.6.1963, 1 Ex.; nr. Wondo, 7.6.1963. 1 Ex.

Distribution: Rhodesia. This genus is usually found in moist places.

Map of the study area of the Finnish Zoological expeditions. Collecting localities for Eumolpinae.

Abend Pass	15	Hargeisa	125	Nimule	74
Abu Hashim	24	Ibba	63	Omo Valley	114
Agaro	117	Ingassana Mts.	26	Opari	73
Agheresalam	113	Iwatoka	67	Pongo R.	51
Ailet	89	Jijiga	123	Port Sudan	13
Awash	106	Juba	72	Rumbek	57
Babanusa	43	Kapoeta	87	Senambio	65
Belleta	118	Kassala	19	Singa	22
Berbera	127	Khartoum	9	Tambura	61
Boma	52	Lahej	131	Tendelti	33
Coca	108	Langano Lake	111	Terakeka	71
Daragodleh	126	Loka	68	Torit	76
Dibeira	1	Lotti	77	Umm Banein	23
Dogali	92	Magwe	75	Umm Ruwaba	34
Ed Damer	6	Malakal	84	Wad Medani	21
El Obeid	35	Maridi	64	Wau	52
Galegu	24a	Massawa	88	Wondo	115
Gilo	79	M'Boloko	58	Yambio	62
Godatair	49	Mundri	60	Yei	66
Gwurra	53	Mvole	59	Zwai Lake	109
Harar	120	Nazareth	107		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34°
38°
42°
46°
50°

Proliniscus sp. nr. *natalensis* (Lefevrea)

Sudan: Equatoria, Tambura-Wau, 25—26.4. 1963. 1 Ex.

Syagrus calcaratus (Fabricius)

Sudan: Equatoria, Ibba-Yambio, 16.4.1963, 1 Ex.

Distribution: Guinea, Senegal, Congo (widely distributed), Nigeria, Ghana. A very common and widespread species usually found in open gallery forest but also grassy or woody savannahs. The ground is almost always moist or marshy. Host stated to be *Parinarium curatellifolium* but also reported to do heavy damage to Malvaceae.

Syagrus ortobiensis Selman

Sudan: Upper Nile, Malakal, 3—20.1.1963, 20 Ex.; Blue Nile, Singa-Damazin, 15—17.11. 1962, 3 Ex.; Blue Nile, Umm Banein, 14.11.1962, 9 Ex.; Blue Nile, Abu Hashim-Galegu, 23—24. 11.1962, 7 Ex.; Blue Nile, Ingassana Mts., 17—22.11.1962, 7 Ex.; Blue Nile, Le Singa-Roseiras, 15—17.11.1962, 4 Ex.; Ed Damer, 27—30.10. 1962, 1 Ex. Ex. Equatoria, Kapoeta- Boma, 26—27.3.1963, 1 Ex.

Ethiopia: Omo Valley, 12.6.1963, 1 Ex.

Somalia: nr. Hargeisa, 23—28.6.1963, 3 Ex.

Distribution: N. Tchad.

Syagrus punctiollis Harold.

Sudan: Equatoria, Juba-Terakeka, 2—6.3. 1963, 1 Ex.

Distribution: Mozambique, Congo (Garamba and Upemba National Parks), Guinea. Found mainly in woody savannah on trees. Host, *Erythrophlaeum guineensis.*

Syagrus tristis Jacoby.

Sudan: Equatoria, Nimule, 11—13.3.1963, 8 Ex.; Equatoria: Tambura-Wau, 25—26.4.1963, 1 Ex.; 27.2.—2.3.1963, 1 Ex.; Juba, 27.2.—2.3. 1963, 1 Ex.

Distribution: Mozambique, S. Africa (Natal), Congo (Upemba National Park).

Syagrus silfverbergi sp.n.

Elongate (Fig. 1). *Length:* 2.6—3.0 mm. *Colour:* dark brown, suture of elytra darker, pronotum almost black, tarsi, antennae and maxillary palps uniformly light brown. *Head:* hypognathous, almost hidden beneath pronotum, heavily punctate, fronto-clypeus not ridged with punctures especially deep and prominent, epicranial suture indistinct. *Antennae:* extending to just behind the elytral humeri, basal segment much dilated, segment 2 short and equal to 5 and 6, 3 a little longer than 2 and equal to 4, 7 a little longer than 3, 8 a little longer than 7 and equal to 9 and 10, 1 a little longer than 8, 11 longer than 1 and x2 as long as 2. *Prothorax:* pronotum almost as long as broad, strongly convex, lateral sides margined and very indistinctly dentate, surface closely and evenly punctured, punctures increasing in size laterally and posteriorly, intervals very lightly shagreened but shiny, punctures non-setate. *Scutellum:* cordiform, impunctate and very lightly shagreened. *Elytra:* elongate, sides very slightly convex, punctate striate, interstices barely raised, shiny, very lightly shagreened. *Legs:* setate, tibia ridged,

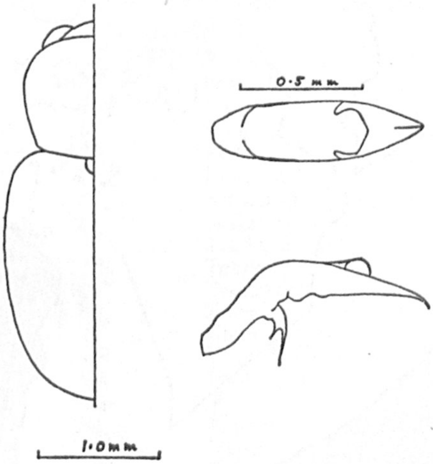

Fig. 1. *Syagrus silfverbergi* sp. n. Dorsal surface of adult and side and dorsal views of aedeagus.

femora with a short ventral tooth. *Aedeagus:* Fig. 1.

Holotype: ♂, Sudan, Equatoria, Torit-Kapoeta, 26.3.1963 (R. Linnavuori) no. 15066 in Museum Zoologicum Helsingfors. Paratypes: Four, data as above in British Museum (Nat. Hist.) London. Three, data as above; One, Sudan, Bahr el Ghazal nr. Gwurra, 21.2. 1963 (R. Linnavuori); and, One, Sudan, Equatoria, Juba-Nimule, 10—11.3.1963 (R. Linnavuori) in Mus. Zool. Helsingfors.

This species is a typical *Syagrus* differing from the other species in its small size and lack of setation. Many *Syagrus* species are associated with ants, the larvae living in the nest of the ant. Ants nests found on the aerial parts of plants seem to be especially favoured.

Sarum pergeminatus (Burgeon)

Sudan: Equatoria, Lotti forest, 14—17.3.1963, 1 Ex.

Distribution: Congo.

Meniellus maculicollis (Jacoby)

Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.; Bahr el Ghazal, R. Pongo, 18.2.1963, 1 Ex.; Equatoria, Loka Forest, 8—10.4.1963, 1 Ex.

Distribution: Eastern Nigeria, Congo (Garamba and Upemba National Parks) commonly found in woody savannah including *Isoberlinia* and *Combretum* forest up to over 1000 m. Hosts, *Nauclea latifolia* and *Combretum* spp.

Massartia minimus (Burgeon)

Sudan: Equatoria, Yei-Maridi, 13.4.1963, 1 Ex.

Distribution: Congo (Garamba National Park). Previously found in woody savannah to over 1000 m. Host, *Combretum binderianum.*

Paraivongius armatus (Burgeon)

Sudan: Equatoria, Yambio, 18—25.4.1963, 1 Ex.

Distribution: Congo.

Paraivongius emaliensis (Bryant)

Ethiopia: Belleta forest, 13—14.6.1963, 1 Ex.; nr. Harar, 22—23.6.1963, 1 Ex.

Sudan: Equatoria, Opari-Magwe, 13.3.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.; Equatoria, Imatong Mts. nr. Gilo, 18—24.3.1963, 1 Ex.

Distribution: Kenya (Sultan Hamud, 4,900—5,900 ft).

Paraivongius katangensis (Burgeon)

Sudan: Equatoria, Opari-Magwe, 13.3.1963, 2 Ex.; Equatoria, Loka forest, 8—10.4.1963, 2 Ex.; Equatoria, Mvolo-Mundri, 24.2.1963, 2 Ex.; Equatoria, Nimule, 11—3.3.1963, 1 Ex.; Equatoria, Juba-Nimule, 10—11.3.1963, 1 Ex.

Distribution: Congo (Katanga Province).

Paraivongius ruandicus (Weise)

Ethiopia: Omo Valley, 12.6.1963, 1 Ex.

Distribution: Ruanda.

Paraivongius sp. 1.

Sudan: Equatoria, Maridi-Ibba, 16.4.1963, 4 Ex.; Equatoria, Yei-Maridi, 13.4.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.

Ethiopia: Omo Valley, 12.6.1963, 3 Ex.

Paraivongius sp. 2.

Sudan: Equatoria, Maridi-Ibba, 16.4.1963, 2 Ex.

Paraivongius rubricollis Selman

Sudan: Equatoria, Yambio, 18—25.4.1963, 3 Ex.

Distribution: Congo (Garamba National Park). Found on savannah trees and grasses beneath savannah trees. Hosts ,*Combretum* spp.

Paraivongius sp. 3.

Sudan: Equatoria, Yambio, 18—25.4.1963, 1 Ex.; Equatoria, Maridi-Ibba, 16.4.1963, 1 Ex.

Paraivongius sp. 4.

Sudan: Equatoria, Yambio, 18—25.4.1963, 3 Ex.

Gaberella costatus Baly.

Sudan: Equatoria, Lotti forest, 14—17.3.1963, 1 Ex.

Distribution: Cameroun, Congo Brazzaville, Congo (Garamba National Park), Uganda (Ruwenzori 2850 ft). Found on the edge of gallery forest in light shade or in grassy savannah on the edge of marshland. Host, *Erythroplaeum guineensis.*

Rhembastus variabilis Harold.
Sudan: Equatoria, Imatong Mts., nr. Gilo, 18—24.3.1963, 12 Ex.; Equatoria, Loka forest, 8—10.4.1963, 3 Ex.; Equatoria, Opari-Magwe, 13.3.1963, 1 Ex.; Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.
Distribution: S. Africa (Natal), Mozambique, Congo (Garamba National Park), West Africa as far as Guinea and the Ivory Coast.

Tribe Eumolpini

Melindea nigrita (Jacoby)
Sudan: Equatoria, Yei-Maridi, 13.4.1963, 3 Ex.; Equatoria, Yei-Maridi, 13.4.1963, (at light), 3 Ex.; Equatoria, Imatong Mts. nr. Gilo, 18—24.3.1963, 2 Ex.; Equatoria, Lotti forest, 14—17.3.1963, 1 Ex.; Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.
Distribution: Ethiopia, Kenya, Congo (Garamba and Upemba National Park), Uganda. This is a species found over much of west, central and eastern Africa in all types of savannah, open grassland, marshes and mountainside. Hosts, *Dombeya* sp. and *Combretum* spp.

Colasposoma auricbalcicum Thomson
Ethiopia: Gembi nr. Agaro, 15.6.1963, 1 Ex.
Distribution: Gabun, Congo (Garamba, Upemba and Albert National Parks). This is a savannah species also found on mountainside vegetation especially on *Lophira.*

Colasposoma fairmairei Lefevrea
Sudan: Equatoria, Loka forest, 8—10.4.1963, 2 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.; Equatoria, Senambio, 14—18.4.1963, 2 Ex.; Equatoria, Ibba-Yambio, 16.4.1963, 4 Ex.
Distribution: Nigeria, Ghana, Cameroun, Spanish Guinea, Congo Brazzaville, Congo (Garamba and Albert National Parks). Found in dense gallery forest and humid woody savannah often by streams and rivers.

Colasposoma sp. 1.
Ethiopia: Belleta forest, 13—14.6.1963, 1 Ex.

Colasposoma sp. 2.
Sudan: Equatoria, Senambio, 14—15.4.1963, 1 Ex.

Lefevrea humeralis Weise
Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.
Distribution: Congo (Garamba National Park), Central Africa, Uganda, Ruwenzori (2750 ft.). Found in woody and grassy savannahs and on river banks. Host, *Beckeropsis uniseta.*

Lefevrea leroyi Burgeon
Sudan, Equatoria, Loka forest, 8—10.4.1963, 2 Ex.; Equatoria, Yambio, 18—25.4.1963, 1 Ex.
Distribution: Congo (Garamba National Park). Found in savannah, gallery and *Isoberlinea* forest on river banks. Hosts, the aerial parts of Gramineae esp. *Combretum* spp.

Lefevrea sp. nr. *leroyi* Burgeon
Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.

Lefevrea longelytrata Burgeon
Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex. Distribution: Congo Kinshasa.

Lefevrea moyoensis Selman
Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.
Distribution: Congo (Garamba National Park).

Lefevrea sp. 2.
Sudan: Equatoria, Ibba-Yambio, 16.4.1963, 1 Ex.

Lefevrea sp.? tunguensis Selman

Sudan: Equatoria, Aloma Plateau, Yei-Iwatoka, 12—13.4.1963, 1 Ex.

Distribution: Congo (Garamba National Park).

Lefevrea pubiventris Bryant

Sudan: Equatoria, Ibba-Yambio, 16.4.1963, 3 Ex.; Equatoria, Yambio, 18—25.4.1963, 3 Ex.; Equatoria, Yei-Maridi, 13.4.1963 (at light), 1 Ex.; Equatoria, Senambio, 14—15.4.1963, 1 Ex.; Equatoria, Imatong Mts. nr. Gilo, 18—24.4.1963, 1 Ex.

Distribution: Congo (Albert National Park), Uganda.

Tribe Adoxini

Pachnephorus conspersus Gerstaecker

Sudan: Ed Damer, 5—10.7.1961, 2 Ex.; 27—30.10.1962, 2 Ex.; Bahr el Ghazal, Wau, 19.2.1963, 3 Ex.; Blue Nile, Issangana Mts., 17—22.11.1962, 1 Ex.; Hargeisa, 23—28.6.1963, 1 Ex.; Upper Nile, Malakal, 3—20.1.1963, 4 Ex.; Dibeira, W. Halfa distr. 1.10.1962, 1 Ex.; collected S. Panelius; Blue Nile, Umm Banein, 14.11.1962, 1 Ex.; Blue Nile, Singa-Damazin, 15—17.11.1962, 1 Ex.; Wad Medani, 26—28.6.1961, 1 Ex.; Khartoum, 30.6—3.1961, 1 Ex.

Somalia: Hargeisa, 23—28.6.1963, 1 Ex.

Distribution: Tanganyika, Congo (Garamba, Upemba and Albert National Parks).

Scelodonta albidovittata Baly.

Sudan: Equatoria, Maridi-Ibba, 16.4.1963, 1 Ex.; Equatoria, Yambio, 18—25.4.1963, 2 Ex.

Distribution: Tanganyika, Congo (Garamba and Upemba National Parks). Found in and on the edge of gallery forest and in woody savannah especially on low sunloving plants in marshy clearings.

Scelodonta parcepilosa Burgeon.

Sudan: Equatoria, Yambio, 18—25.4.1963, 1 Ex.

Distribution: Congo.

Scelodonta raffrayi Lefevrea

Ethiopia: nr. Lake Langano, 6.6.1963, 2 Ex.

Distribution: Ethiopia.

Scelodonta wittei Burgeon

Sudan: Behr el Ghazal, Rumbek-M'Boloko, 22.2.1963, 1 Ex.; Bahr el Ghazal, Godatair, 19.2.1963, 3 Ex.; Blue Nile, Abu-Hashim-Galegu, 23—24.11.1962, 1 Ex.; Blue Nile, Ingassana Mts. 17—22.11.1962, 1 Ex.; Kordofan, nr. Babanusa, 15.2.1963, 1 Ex.; Kassala, Abend Pass, 5.12.1962, 1 Ex.

Ethiopia: Jijiga, 23.6.1963, 1 Ex.

Somalia: Hargeisa-Berbera, 25—27.6.1963, 1 Ex.

Erithrea: Massawa, 27—20.5.1963, 1 Ex.

Distribution: Congo Brazzaville and Congo Kinshasa.

Pseydocolaspis chrysites Gerstaecker

Ethiopia: nr. Lake Zuai, 6.6.1963, 1 Ex.

Distribution: Tanganyika, Mozambique.

Macrocoma lefevrey Baly

W. Aden Prot.: nr. Lahej, 9—15.7.1963, 1 Ex.

Distribution: Arabia and Persia.

Macrocoma leprieuri Lefevrea

Sudan: Port Sudan, 25—27.10.1962, 1 Ex.; Equatoria, Kapoeta-Boma, 26—27.3.1963, 1 Ex.; Kordofan, Tendelti-Umm Ruwaba, 25.1.1963, 1 Ex.

Ethiopia: Awash, 8.6.1963, 1 Ex.

Somalia: Hargeisa, 23—28.6.1963, 1 Ex.

Distribution: Algeria.

Dicolectes rugulosus Lefevrea

Sudan: Equatoria, Maridi-Ibba, 16.4.1963, 1 Ex.

Distribution: Congo (Garamba National Park).

Eryxia holosericea Klug

W. Aden Prot: nr. Lahej, 9—15.7.1963, 1 Ex.

Distribution: Senegal, Gabum, Congo Brazzaville.

Eryxia ritchiei Bryant

Sudan: Equatoria, Kapoeta-Boma, 26—27.3.1963, 3 Ex.

Eryxia sp. 1.

Erithrea: Dogali-Ailet, 26.5.1963, 1 Ex.

Tribe Colaspoidini

Platycorynus compressicornis Fabricius

Sudan: Equatoria, Yambio, 18—25.4.1963, 3 Ex.

Distribution: Throughout west, central and east Africa including Congo (Garamba and Albert National Parks). Found on bushes on the edge of dense gallery forest.

Platycorynus cribratellus Fairmaire.

Ethiopia: nr. Lake Zwai, 6.6.1963, 1 Ex.; Coca, artificial lake, 6.6.1963, 3 Ex.

Distribution: Uganda, Kenya, Ethiopia, S. Sudan, Niam Niam, Congo, (Garamba National Park). Found in or on the edge of dense gallery forest in light shade.

Platycorynus dejeuni Bertoloni

Ethiopia: Belleta Forest, 13—14.6.1963, 1 Ex.

Distribution: East Africa from Kenya to Cape Province, S. Africa, Central Africa, Congo (Upemba National Park).

References

SELMAN, B. J. 1965: A revision of the Nodini and key to the genera of Eumolpidae of Africa (Coleoptera: Eumolpidae). — Bull. Brit. Mus. Nat. Hist. 16:143—174.

—»— 1972: Eumolpinae (Coleoptera: Chrysomelidae). — Exploration du Parc National de la Garamba — Mission H. de Saeger (1949—52). 55:1—95.

Litteratur

GRIFFITHS, G. C. D. 1972: The phylogenetic classification of Diptera Cyclorrhapha with special reference to the structure of the male praeabdomen. 340 sidor, 154 fig. — Dr. W. Junk N. V., Haag. Pris 126 mk.

Det är ingen liten uppgift, som den kanadensiska, ursprungligen brittiska, dipterologen G. C. D. Griffiths har gett sig in på i föreliggande bok. Han klassificerar här familjerna inom den taxonomiska enhet, Cyclorrhapha, till vilken det stora flertalet flugor hör och som utmärker sig genom att puparierna öppnar sig med ett runt lock vid kläckningen. I stort sett samma grupper behandlades av den kända tyska dipterologen prof. Willi Hennig, som lancerade den kladistiska teorin för fylogenetiska system. Griffiths, själv anhängare av Hennigs teorier in i minsta detalj, ändrar dock en hel del på Hennigs gruppering av flugfamiljerna. Som kategorier inom Brachyera använder han superfalang, falang, subfalang, infrafalang, superfamilj, och prefamilj för gruppering av familjerna, allt detta en följd av det kladistiska systemet. Härigenom kommer till exempel infrafalangen Syrphidea (med familjerna Pipunculidae och Syrphidae) att bli av samma rang som Schizophora med 5 superfamiljer och inalles 71 familjer. I superfamiljen Muscoidea inplacerades de calyptrata flugorna mitt ibland acalyptrater. Schizophorernas system inleds med Lonchaeidae, de lauxanoida och drosophiloida familjerna, som kommer mycket senare i Hennigs system. De högre flugornas, schizophorernas, system har haft en barlast i form av alltför många små familjer. Detta har Griffits i viss mån försökt råda bot på och slagit ihop ett 20-tal dylika med närstående familjer. Å andra sidan grundar han 8 nya eller till sin status nya familjer. Till exempel Heleomyziderna delar han på trenne familjer, vilka han placerar i olika prefamiljer. Griffiths bygger upp sitt system konsekvent på synapomorfa karaktärer och

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Drosophila ovivororum sp. n., a new species of the Drosophila virilis group (Diptera, Drosophilidae).

Seppo Lakovaara & Walter Hackman

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and Zoological Museum SF-00100 Helsinki 10, Finland)

Since 1970 the authors have cultured a laboratory stock of a drosophilid fly which is very closely related to *Drosophila* (s.str.) *lummei* Hackman. It was mentioned in the description of *D. lummei* (Hackman 1972) that a stock descended from a single female specimen from Karesuando in Swedish Lapland possibly belonged to another species, which we were not able to separate morphologically from *D. lummei.* In 1972 the authors and their co-workers made special efforts to clarify the status of this stock by extensive collecting and re-examination of materials from 1970. It proved to belong to a distinct new species, which was found in several other localities besides Karesuando, in Finland and Sweden. The species can be distinguished from *D. lummei* by the characters of the male genitalia and (at least in fresh specimens) the oral bristles.

The name of the new species, *ovivororum* (of the sheep eaters), was taken from the title of a novel by the Finnish writer Veikko Huovinen. There was a coincidental double connection between the novel and our collecting trip to Lapland in 1970, during which the new species was found.

D. ovivororum sp.n. is apparently fairly common in Finland, occurring sympatrically with three other species of the *virilis* group (*D. littoralis* Meigen, *D. lummei* Hackman and a species possibly identical with *D. ezoana* Takada & Okada).

The description of *Drosophila* (s.str.) *ovivororum* sp.n. is as follows:

♂ — Body length about 3.2 mm and wing length 3.5 mm. Head colouring and chaetotaxy, with the exception of the oral bristles, as in *lummei.* Third joint of antennae dark grey, as in *lummei.* Arista with three or four dorsal and two or three ventral branches in addition to the end fork; seven or eight

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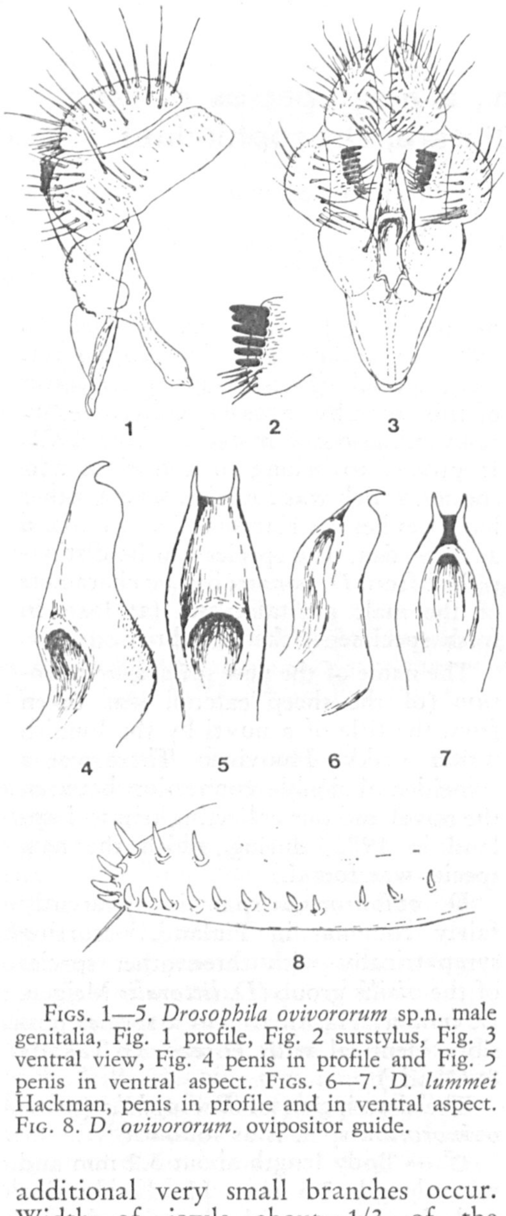
tillmäter säkerligen med rätta byggnaden av hanens postabdomen stor taxonomisk betydelse. Antalet oplacerade familjer är få: Canacidae, Fergusonidae, Notomyzidae och Braulidae. Det undersökta materialet har i en del grupper varit rätt knappt men trots allt synes det som om arbetet fört diptersystematiken ett stort steg framåt. Det väsentliga är att nya synpunkter på de olika flugfamiljernas släktskap har fåtts fram och på denna punkt kommer helt visst även sådana dipterologer, som ställer sig kritiska gentemot kladismen, att ge honom sitt erkännande. Arbetet är redigt och klart uppställt och i slutet av boken finner man hela systemet för Brachycera. Boken är ju närmast avsedd för diptersystematiker men på grund av det mera allmänt betonade inledningsavsnittet kan den vara en intressant läsning för både anhängare och motståndare till Hennigs principer för ett fylogenetiskt system och avgränsning av taxa.

Walter Hackman



Figs. 1—5. *Drosophila ovivororum* sp.n. male genitalia, Fig. 1 profile, Fig. 2 surstylus, Fig. 3 ventral view, Fig. 4 penis in profile and Fig. 5 penis in ventral aspect. Figs. 6—7. *D. lummei* Hackman, penis in profile and in ventral aspect. Fig. 8. *D. ovivororum*. ovipositor guide.

additional very small branches occur. Width of jowls about 1/3 of the vertical diameter of the eye, thus broader than in *lummei*. Facial carina not different from that of *lummei*. Vibrissa strong, more than twice as long as the second oral bristle. The latter slightly stronger and more protruding than the following oral bristles. In *lummei* the second and the following oral bristles are almost equally strong. Mesonotum with the same colour and stripe pattern as in *littoralis* and *lummei*. Acrostichal hairs in six rows. Bristles of mesonotum and scutellum as in *lummei*. Colour and chaetotaxy of the pleura as in *lummei*. Posterior cross-vein of the wing shaded to the same extend as in *littoralis* and *lummei*. Costal index of the wing 2.9—3.5. The stronger costal fringe extending about 2/5 to 2/3 of the distance between 2nd and 3rd vein. Legs as in *lummei*. Abdomen dark grey or black. Male genitalia as in Figs. 1—5. Surstyli with combs of 5—8 dark teeth (in *lummei* 5—6). The comb of teeth is inserted at a slightly different angle, more obliquely, than in *lummei*. The best character diagnostic of the species is the shape of the penis (Figs. 4—5). In *ovivororum* the straight medioventral part before the end hooks of the penis is much longer than in *lummei*. (Figs. 6—7).

♀ — Body length about 3.4 mm. and wing length 3.5 mm. Extremely similar to the female of *lummei*. The females of these two species can be separated from those of *littoralis* by the dark third joint of the antennae (in *littoralis* partly more brownish). In dried pinned specimens this difference is less distinct. Vibrissa and other oral bristles as in the male and can, at least in fresh specimens, be used for separating *ovivororum* from *lummei*. Costal index of wing 2.8—3.7. Legs as in *lummei*. Ovipositor (Fig. 8) of same type as in *littoralis* and *lummei*. We have not been able to find constant characters in the marginal dentation of the ovipositor for separating any of the four species of the *virilis* group occurring in Finland and Sweden.

Holotype, ♂, Sweden, Karesuando in Swedish Lapland, from a laboratory stock started by the authors in 1970. The holotype, a pinned specimen (type no. 14265), is preserved in the collection of the Zoological Museum, Helsinki. Paratypes ♂♂ and ♀♀ from the same stock as the holotype and from stocks from the following Finnish localities: Kuopio (started 1972, J. Immonen), Kiuruvesi (started 1972, A. Nederström), Oulanka (started 1972, J. Lumme & W. Hackman).

Numerous samples of this species have been identified by morphological traits and also by enzyme electrophoresis.. A detailed account, including biochemical and cytological characters of the four European species of the *virilis* group will be published later. The localities so far for *D. ovivororum* are as follows (The grid system used is the same as in HACKMAN 1972):

Finland: *Ab:* Tenhola (grid 666:27), 1♂ 1972 (J. Lokki); *N:* Esbo (668:36), 3 ♀♀ 1972 (W. Hackman); *Ta:* Tyrväntö (678:35), 7 ♂♂ 3 ♀♀ 1972 (J. Lokki), Lammi (677:39), 2 ♂♂ 1972 (J. Lumme & P. Lankinen), Maakeski (679:41) 1 ♂ 1 ♀ (P. Lankinen); *Sa:* Punkaharju (685:62) 3 ♂♂ 1972 (J. Lumme), Rantasalmi (688:56), 1 ♂ 1970 (A. Nederström); *Tb:* Jyväskylä (690:43), 1 ♂ 1972 (J. Lumme); *Sb:* Kuopio, Vaajasalo (697:53) 4 ♂♂ 10 ♀♀ 1970, 27 ♂♂ 28 ♀♀ 1972 (S. Lakovaara & J. Immonen), Kiuruvesi (705:46), 31 ♂♂ 16 ♀♀ 1972 (A. Nederström); *Kb:* Ilomantsi (697:68) 4 ♂♂ 3 ♀♀ 1972 (P. Lankinen); *Ok:* Kajaani (712:53) 1 ♀ 1970 (S. Lakovaara), Paltamo (714:53), 5 ♂♂ 1972 (A. Oikarinen); *Ob:* Oulu, Hupisaaret (721:42), 1 ♀ 1972 (A. Oikarinen & K. Kavalto), Oulu, Sanginsuu (720:43), 1 ♂ 1972 (R. Alatalo), Kemi (729:38), 23 ♂♂ 21 ♀♀ 1972 (J. Lumme & A. Oikarinen), Kemijärvi (740:54), 1 ♂ 1 ♀ 1972 (R. Alatalo); *Ks:* Oulanka (736:60) 51 ♂♂ 18 ♀♀ 1972 (W. Hackman, J. Lumme, S. Lakovaara); *Lkem:* Pyhäjärvi (744:50) 7 ♂♂ 1972 (A. Saura), Hinkula (751:48) 1 ♂ 1970 (W. Hackman, S. Lakovaara & J. Immonen), 3 ♂♂ 1972 (S. Lakovaara & J. Lumme), Vuotso (750:50) 1 ♂ 1 ♀ 1972 (A. Saura); *Le:* Kilpisjärvi (767:25), 7 ♂♂ 1972 (J. Lumme); *Li:* Utsjoki (777:52) 1 ♂ 1972 (O. Taivainen). — Sweden: Strängnäs 1 ♂ 2 ♀♀ 1972 (P. Lankinen); Karesuando (type locality), 1 ♀ 1970 (S. Lakovaara, W. Hackman & J. Immonen). Most of the specimens mentioned have been checked by enzyme electrophoresis and thus not preserved.

D. ovivororum has been collected in the same kind of biotopes as the other three North European species of the *virilis* group, and in several cases it has been taken in the same samples as the other species, on lake and river shores. Laboratory experiments indicate that the North European populations of *ovivororum*, *lummei*, *littoralis* and the fourth species *(ezoana?)* are reproductively isolated. Among the American species of the *virilis* group, *D. montana* Stone & Patterson is morphologically very close to *ovivororum*.

Reference

HACKMAN, W. 1972: Drosophila lummei sp. n., a new species close to D. littoralis Meigen (Diptera, Drosophilidae). — Notulae Entomol. 52:89—92.

Atomaria mongolica Johnson i Finland (Coleoptera, Cryptophagidae)

Arten är beskriven av Colin Johnson, som arbetar vid Manchester Museum i England. Han har funnit den bland material, som dr Kaszab insamlat i Mongoliet ca 300 km söderom Irkutsk. Kaszab fann arten i sina fem markfällor med ethylenglycol på 1600 meters höjd den 11. 6. 1966 och den 27. 7. 1966, sammanlagt i 35 exemplar.

Atomaria mongolica står nära *A. berolinensis* Kraatz, men förutom genom sin mörkare färg skiljer den sig från *berolinensis* genom att antennerna, med undantag av antennklubborna, är litet kortare och tjockare. Halsskölden hos *mongolica* är mera tvär och mera avsmalnande mot basen, varigenom hela skalbaggen gör ett slankare intryck, särskilt kommer detta fram hos hanen. Även genitalierna är olika.

I Finland har *A. mongolica* tagits av Dag Hemdal i *Sb:* Vehmersalmi den 18. 6. 1946 vid kvällsfångst med slaghåv. Enligt brev av Johnson är den dessutom tagen i *Lk:* Kirjavalaks nära Sordavala.

Sten Stockmann

Entomologiska Föreningen i Helsingfors
Helsingin Hyönteistieteellinen Yhdistys

Verksamhetsberättelse för år 1972

Under verksamhetsåret har föreningen haft sina ordinarie månadsmöten tredje onsdagen i april och maj, onsdagen den 27 september samt tredje onsdagen i oktober och november. Årsmötet hölls den 16 februari samt ett med Suomen Hyönteistieteellinen Seura gemensamt möte den 17 mars. Mötesplatsen har varit Universitetets Zoologiska Institut utom vid oktobermötet, som hölls på Svenska Klubben.

Vid mötena, som i medeltal besökts av 16 medlemmar, har hållits följande föredrag: Mag. Bo Forsskåhl: Om inre sekretion hos pedogenetiska gallmyggor (16. 2.). — Dr Antti Jansson: Pikkumalluaisten ääntelyn merkityksestä (19. 4.). — Agr. lic. Svante Ekholm: Om entomologisk forskning i Dickursby (17. 5.). — Prof. Olli Halkka: Sylkikaskaan saaristopopulaatioiden ekologista genetiikkaa (15. 11.). På septembermötet diskuterades insekttillgången under sommaren 1972. Diskussionen inleddes av lic. Svante Ekholm och dr Harry Krogerus. Oktobermötet ägnades en diskussion om nya former för mötesverksamheten. Programmet för det med Suomen Hyönteistieteellinen Seura gemensamma mötet utgjordes av vetenskapliga meddelanden. Vid mötena gjordes inalles 22 vetenskapliga meddelanden: Dr Harry Krogerus, stud. Jyrki Muona och fil.lic. Hans Silfverberg 3, agr.lic. Svante Eeholm och tf. prof. Walter Hackman 2, stud. Eero Helve, prof. Esko Kangas, prof. Tahvo Kontuniemi, dr. Martin Meinander, fil.kand. Antti Pekkarinen, prof. Mikko Raatikainen, prof. Max v. Schantz och dr Sten Stockmann envar ett meddelande.

En sommarexkursion företogs den 25—28 juli till Nåtö biologiska station på Åland (8 deltagare).

Den under verksamhetsåret tryckta volymen av föreningens tidskrift omfattar 144 sidor. Skulden till tryckeriet är fortfarande betydande och statsunderstödet, 12.000 mk, oförändrat sedan flera år tillbaka.

Föreningen deltar jämte entomologiska sammanslutningar i Danmark, Norge och Sverige i utgivandet av tidskriften Entomologica Scandinavica, som år 1972 utkommit med volym 3, 320 sidor.

Följande stipendier för entomologisk forskning har utdelats: Åt mag. Bo Forsskåhl 800 mk för fortsatta undersökningar beträffande pedogenetiska gallmyggors endokrinologi, samt åt nat.kand. Finn Löf och nat.kand. Leif Blomqvist vardera 300 mk för olika undersökningar över pedogenetiska gallmyggors metamorfos.

Under verksamhetsåret har föreningens hedersledamot lektor Axel Wegelius samt prof. Karl-Herman Forsslund och tandl. Arne Sundholm avlidit.

Till nya medlemmar har invalts nat.kand. Leif Blomqvist, fil.kand. Juhani Itämies, dr Antti Jansson, med.lic. Magnus Landtman, stud. Jyrki Muona och fil.kand. Ilkka Teräs.

Styrelsen har haft följande sammansättning: Ordförande dr Harry Krogerus, viceordf. prof. Max. v. Schantz, sekreterare tf. prof. Walter Hackman, skattmästare dipl.ekon. Ingmar Rikberg, bibliotekarie mag. Bo Forsskåhl samt övriga medlemmar dr Martin Meinander och mag. Pehr Ekbom. Styrelsen har sammanträtt 4 gånger under verksamhetsåret.

Redaktionskommittén har bestått av: Redaktör dr Martin Meinander, biträdande redaktör dr Samuel Panelius samt övriga medlemmar agr.lic. Svante Ekholm, tf. prof. Walter Hackman, dr Harry Krogerus och fil.lic. Hans Silfverberg.

Revisorer har varit prokurist Carl-Erik Regnell och mag. Björn Federley med nat.-kand. Finn Löf och stud. Marcus Wikman som suppleanter.

Mötesreferat — Kokousselostuksia

Månadsmöte — 27. IX. 1972 — Kuukausikokous

Ordförande yttrade minnesord över hedersledamoten, lektor Axel Wegelius, som avlidit under sommaren.

Agr.lic. Svante Ekholm inledde diskussionen om insekttillgången under sommaren 1972 med en klimatologisk översikt. Sommarmånaderna hade varit extremt varma och gynnsamma alldeles speciellt i Lappland, där dagstemperaturer omkr. +30° varit rådande under en lång period.

Dr Harry Krogerus redogjorde för fjärilarnas frekvensförhållanden i Lojo-området. Trots den extremt varma men dock ej alltför torra sommaren var artantalet vid ljusfångst ej överväldigande stort utan ungefär som år 1968. Noktuiderna på ljus uppvisade i allmänhet mindre populationer än normalt, av *Noctua pronuba*

L. påträffades t.ex. endast 1 ex. Dagfjärilarna förekom rätt normalt så när som på att *Aporia crataegi* L., *Limenitis populi* L. och *Argynnis paphia* L. fortfarande saknades. Bland svärmarna saknades *Sphinx ligustri* L. och *Hemaris*-arterna medan *Deilephila porcellus* L. var talrik. Bland spinnarna kunde en återhämtning noteras beträffande *Leucodonta bicoloria* Schiff. och *Stauropus fagi* L. *Cosmotriche potatoria* saknades fortfarande och *Orgya antiqua* var detta år sällsynt. Bland de få nattflyn, som detta år uppvisade en högfrekvens var *Dicestra trifolii* Hfn., *Calotaenia celsia* L., *Catocala fraxini* L. samt *Plusia*-arterna, särskilt *P. confusa* Stphn. Immigranter hade uppträtt vid flera tidpunkter under sommaren: *Pontia daplidice* L., *Nymphalis io* L., *Vanessa atalantia* L. och *V. cardui* L. samt *Spodoptera exigua.* Beträffande andra insektgrupper påpekade dr Krogerus den exeptionellt rika tillgången på myggor hela sommaren i genom även i S. Finland. Sannolikt på grund av ogynnsamt utgångsläge lyckades getingarna ej bli särdeles talrika. Under september uppträdde dipteren *Bibio clavipes* Meig. i otroliga mängder på ljus i S. Finland, i Lojo ca 8.000 ex. per kvicksilverlampryssja. — Dr Sten Stockmann hade erhållit skalbaggar mycket rikligare än normalt i Sibbo på lampa. — T.f. prof. Walter Hackman omnämnde att han iakttagit massförekomst av barkborrar samt *Pityophagus ferrugineus* och *Hylobius abietis* kring en nybyggd villa i Esbo under juni månad. På kvicksilverlampa hade han erhållit ett ex. av *Acanthocinus griseus* F. i Esbo: Kolmperä. Massförekomsten av *Bibio clavipes* hade även iakttagits där i september. Bland höstfjärilarna hade *Ennomos alnaria* L. uppträtt speciellt rikligt i år samt med lång flygtid från sista dagarna av juli till mitten av september. — Agr.lic. Svante Ekholm redogjorde för frekvensförhållanden hos ett antal Rhopalocera och Grypocera och påpekade bland annat att *Adopaea lineola* O. uppträtt mycket rikligt och ökat i frekvens österut i S. Finland. *Argynnis laodice* Pallas har iakttagits av honom i Pellinge. På vissa skadeinsekter hade den starka sommarvärmen tydligen verkat decimerande, så t.ex. torde ägg av flugan *Pegomyia hyoscyami* tagit skada. — Dr Krogerus påpekade med anledning av meddelandet att åtminstone ett 20-tal ex. av *Agynnis laodice* observerats i år på olika ställen i landet.

Ylioppilas Jyrki Muona näytti Suomelle uutena lyhytsiipisen *Atheta consamguinea* Epph. saatu Uudenmaan Hautjärveltä 28. 7. 1972. Tämän lisäksi hän näytti harvinaisen lyhytsiipisen *Stenus sylvester* Er. Hautjärveltä.

Dr Harry Krogerus omnämnde att han återigen detta år erhållit *Rhipidius quadriceps* Ab. i Lojo samt i Täcktom. — Ylioppilas Jyrki Muona mainitsi lis. K. Mikkolan saaneen 11 kpl. tätä lajia Tammisaaren Gullöstä.

Agr.lic. Svante Ekholm nämnde ytterligare om skadeinsekter i år att äppelvecklaren (*Carpocapsa pomonella* L.) och rönnbärsmalen *Argyrethia conjugella* Z.) kraftigt angripit äpplen. Större skador än vanligt på bladen av körsbär och krikon hade förorsakats av larver av bladstekeln *Caliroa limacina* Retz. Kålmalen *Plutella maculipennis* Curtis hade haft ett gott år. Agr. Ekholm kompletterade sitt tidigare meddelande om dagfjärilar med att *Pontia daplidice* tidvis under sommaren varit en dominerande pierid mellan Notholmen och Hangö. — Dr Krogerus tillfogade att han observerat *Pontia daplidice* rikligt under ett besök i juli i Imatra.

Dr Harry Krogerus förevisade den för landet nya småfjärilen *Dichomeris limosella* Schläg. tagen i Imatra 15 juli 1972.

Månadsmöte — 18. X. 1972 — Kuukausikokous

Agr.lic. Svante Ekholm redogjorde för coloradobaggens, *Leptinotarsa decemlinatas* uppträdande i grannländerna och betonade möjligheten att detta djur på anemo-hydrokor väg kan komma över till Finland från Estland. I Sverige är de nordligaste fynden ca 30 km SE om Stockholm.

Ordf. inledde en diskussion om möjligheterna till en förnyelse av mötesprogrammen. Enighet nåddes bland annat om följande riktlinjer: Mötena kunde uppdelas i sådana med rent vetenskapligt program varvid i kallelsecirkuläret ingår ett orienterande förhandsreferat samt möten med mer populärt betonat program. Möten kunde ägnas åt särskilda temata om lämplig anledning finnes. Diskussionen om sommarens insekttillgång, ett regelbundet återkommande program, kunde vara lämpligt för ett med Suomen Hyönteistieteellinen Seura anordnat gemensamt möte på hösten som skulle ersätta det sedvanliga gemensamma mötet i mars. Mer faunistiska meddelanden efterlystes, ej blott sådana som gäller för faunan nya arter.

Till ny medlem invaldes med.lic. Magnus Landtman, Helsingfors.

Månadsmöte — 15. XI. 1972 — Kuukausikokous

Meddelades att föreningen uppvaktat dr Sten Stockmann med telegram till hans 70-årsdag den 14. 11.

Prof. Olli Halkka piti esitelmän: »Sylkikaskaan saaristopopulaatioiden ekologista genetiikkaa».

Fil.lic. Hans Silfverberg förevisade ett för Finlands politiska område nytt inomhusskadedjur, dermestiden *Thylodrias contractus* Motsch. funnen i Helsingfors (O. Halkka). Tidigare fynd föreligger från Viborg (E. Thuneberg, Löfgren).

Ylioppilas Jyrki Muona näytti maamme nykyiselle alueelle uuden lyhytsiipisen *Atheta (Microdota) platonoffi*, Brundin tavattu Kuusamon Käylästä heinäkuussa 1972 sekä harvinaisen lyhytsiipisen *Tomoglossa luteicornis* Erichson, Mäntsälän Hautjärveltä elok. 1971. Tämän lisäksi yo Muona ilmoitti löytäneensä Siuntion Näsbystä 6. 8. 1967 *Atheta*-lajin joka ilmeisesti on tieteelle uusi ja hyvin lähellä *A. (s.str.) nigricornis*-lajia. Harvinaisen sienikuoriaisen *Liodes puncticollis* Thoms. hän oli löytänyt Oulun Pyhäjärveltä 20. 8. 1972.

Dr Martin Meinander meddelade att Ab Tilgmann från och med 1973 upphör att trycka boktryck och helt övergår till offset, varför Föreningen blir tvungen att anlita ett annat tryckeri för Notulae Entomologicae.

Dr Harry Krogerus, tf. prof. Walter Hackman och stud. Carl Gustav Lagercranz redogjorde och förevisade bilder från sommarexkursionen till Nåtö. Fjärilfångsten hade särskilt den första kvällen 26. 7. varit mycket givande. Bland annat erhölls *Lithosia pallifrons, Pyrrhia umbra* och *Scotosia rhamnata.*

Årsmöte — 21. II. 1973 — Vuosikokous

Ordförande yttrade minnesord över prof. Karl-Herman Forsslund, som avlidit 25. 1. 1973.

Lääk.lis. Markus Brummer-Korvenkontio piti esitelmän: »Artropodit arbovirusten levittäjinä.»

Sekr. uppläste föreningens verksamhetsberättelse för år 1972. Skattmästaren gav en översikt av föreningens räkenskaper för 1972. Bibliotekarien gav en redogörelse över biblioteket under 1972. Revisionsberättelsen upplästes och då den ej innehöll några anmärkningar, beviljades styrelsen och redaktionskommittén ansvarsfrihet för 1972.

Beslöts att medlemsavgiften och prenumerationsavgiften för 1974 skulle förbli oförändrad. Skattmästarens budgetförslag för 1973 omfattades.

Beslöts att en stipendiesumma på 1200 mk skulle lediganslås för entomologisk forskning. Summan utdelas som ett eller flera stipendier. Den sökande bör vara medlem av föreningen och ansökningarna bör inlämnas till sekr. senast den 15 april 1973.

Vid valet av styrelse omvaldes denna i sin helhet och fick följande sammansättning: Ordf. dr Harry Krogerus, viceordf. prof. Max v. Schantz, sekr. t.f. prof. Walter Hackman, skattm. dipl.ekon. Ingmar Rikberg, bibliotekarie mag. Bo Forsskåhl, övriga medlemmar doc. Martin Meinander och mag. Pehr Ekbom.

Redaktionskommittén omvaldes i sin helhet och fick följande sammansättning: Redaktör, doc. Martin Meinander, bitr. redaktör doc. Samuel Panelius, övriga medlemmar dr Harry Krogerus, t.f. prof. Walter Hackman, agr.lic. Svante Ekholm och fil.lic. Hans Silfverberg.

Till revisorer valdes prokurist Carl-Erik Regnell och mag. Björn Federley med stud, Roland Skytén och stud. Marcus Wikman som suppleanter.

Cand.mag. Ebbe Schmidt Nielsen, Århus, invaldes till medlem.

Mag. Pehr Ekbom redogjorde för importinsekten *Cycloptiloides orientalis* (Gryllidae), som innästlat sig som inomhusskadedjur i Seinäjoki. Arten hade angetts i Notulae Entomol. 52:126 felaktigt som en tettigonid.

Månadsmöte — 28. III. 1973 — Kuukausikokous

Mötet hade anordnats som ett informations- och diskussionstillfälle för allmänheten rörande koloradoskalbaggen och pälsängrarna. Lic. Svante Ekholm redogjorde för koloradoskalbaggen och dess möjligheter att eventuellt invadera Finland. Mag. Pehr Ekbom gav därefter en översikt över pälsängrarnas *(Attagenus pellio, A. fasciatus* och *A. piceus)* förekomst i Finland och över deras biologi och bekämpning.

Yhdistyksen jäseneksi valittiin prof. Olli Halkka, Helsinki.

Lic. Svante Ekholm meddelade att han sett en uppgift i litteraturen att *Pieris brassicae* utbrett sig till Chile.

Månadsmöte — 18. IV. 1973 — Kuukausikokous

Dos. Kauri Mikkola piti esitelmän: »*Hepialus humulin* elintavoista.» Uudeksi jäseneksi valittiin tri Rauno Linnavuori, Raisio.

Månadsmöte — 16. V. 1973 — Kuukausikokous

T.f. prof. Walter Hackman höll ett föredrag om giftiga insekter.

Mötesförhandlingarna inleddes med utdelandet av årets stipendier för entomologisk forskning, inalles en summa på 1.200 mk. Stipendier hade sökts av FK Juhani Itämies för en undersökning av fjärilfaunan i Raumo skärgård, av stud. Jyrki Muona för en undersökning av *Atheta*-arternas utbredning, av stud. Olof Biström och med.-kand. Eero Helve för insamling av skalbaggar vid Tana älv samt av nat.kand. Leif Blomqvist för fortsatta studier beträffande pedogenesen hos galmyggan *Heteropeza pygmaea.* På styrelsens förslag beslöts att FK Itämies erhåller 500 mk, stud. Muona 500 mk samt stud. Biström och med.kand. Helve tillsammans 200 mk.

På styrelsens förslag beslöts att under veckoslutet 24—26 augusti anordna en exkursion till Lammi biologiska station.

Till nya medlemmar invaldes stud. Mikaela Ahlman, Tavastby och stud. Öivind Ringsgård.

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Rutsystemsbeteckning för angivande av fyndplats inom biologisk forskning

De naturvetenskapliga museerna, samfunden och föreningarna har kommit överens att inom de biologiska vetenskaperna använda enhetskoordinatsystemet för betecknande av fyndplatser och iakttagelseorter. Det är därför att rekommendera att alla entomologer inför koordinatbeteckningar på de etiketter de låter trycka.

Enhetskoordinatsystemet är benämningen på ett rätvinkligt koordinat- och rutsystem, vars p-axel sammanfaller med meridianen E 27° och som är angivet på de grund- och topografiska kartor i skala 1 :20 000 och 1 : 100 000 som har utkommit efter år 1962, samt på de år 1967 utkomna generalkartorna i skala 1 : 400 000. Ifrågavarande koordinatsystem anges på de nämnda kartorna med röda (bruna) rutor eller marginalbeteckningar. Enhetskoordinaterna är desamma som de på grundkartorna med svart angivna sifferbeteckningar och rutor, vilkas p-axel sammanfaller med p-axeln i enhetskoordinatsystemet.

Koordinattalet betecknar ett kvadratiskt område, vars storlek bestäms av antalet siffror i koordinatbeteckningarna. Områdena kan sammanslås till större eller delas i mindre rutor med decimaler. Därvid är koordinatbeteckningarnas sifferantal i motsvarande grad mindre eller större. Varje rutas decimalindelning sker med siffrorna 0 till 9 nedifrån uppåt och från vänster åt höger. Koordinatbeteckningen är tvådelad. Dess första del anger rutans p-koordinat och dess senare del rutans i-koordinat. Mellan dessa delar kan i skrift användas ett kolon. p-koordinaten börjar alltid med siffran 6 eller 7, vilken betecknar 1 000 km. i:s värde i origo vid p-axeln är 500 km. Antalet siffror i koordinattalen är sålunda alltid udda och p innehåller alltid en siffra mera än i.

Angivande av koordinaterna för en ort eller plats sker med den noggrannhet, som i det aktuella fallet kan betecknas som ändamålsenlig. Om t.ex. platsens läge anges med en noggrannhet av 1 kvadratmil, är koordinattalet 5-siffrigt (t.ex. 669 : 40 eller 66940). Om angivelsen sker med noggrannheten av 1 ha är koordinattalet 9-siffrigt (t.ex. 66940 : 4009 eller 669404009). I sammandrag gällande utbredningsuppgifter och i andra därmed jämförbara fall insamlas uppgifterna i regel per grundruta, varmed avses en ruta vars yta är 1 kvadratmil. Vid lokala undersökningar används givetvis mindre rutor.

Utöver platsangivelse baserad på rutsystemet bör platsbeteckningen lämpligen samtidigt även ske med angivande av kommunens, byns, terrängformationers osv. namn, likaså skall beteckningarna för de naturvetenskapliga provinserna fortfarande användas. Vid användningen av kommunernas namn är det skäl att beakta, att kommunnamnet betecknar det område, som kommunen omfattade under det år, under vilket iakttagelsen gjordes.

Finland 669 : 40
N. Sibbo
24. VII. 1971
Kalle Johansson

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